

REPRODUCED AT GOVERNMENT EXPENSE.

AD-A149 987

CSI BATTLEBOOK

CSI BATTLEBOOK 16-C

THE MOSELLE RIVER CROSSING

Combat Studies Institute
Fort Leavenworth, Kansas

2 DTIC
ELECTED
FEB 4 1985
S A D
B



COMBAT
STUDIES
INSTITUTE

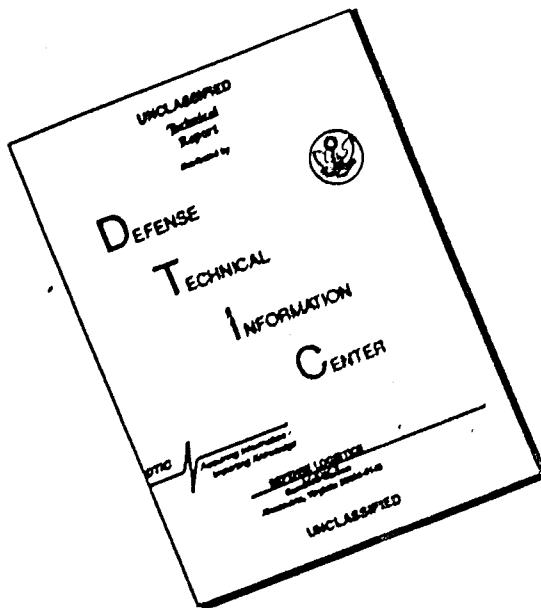
DIA-SG-3262

DTIC FILE COPY

DISTRIBUTION STATEMENT A
Approved for public release
Distribution Unlimited

85 01 31 014

DISCLAIMER NOTICE



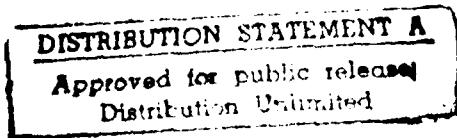
**THIS DOCUMENT IS BEST
QUALITY AVAILABLE. THE COPY
FURNISHED TO DTIC CONTAINED
A SIGNIFICANT NUMBER OF
PAGES WHICH DO NOT
REPRODUCE LEGIBLY.**

CSI BATTLEBOOK 16-C

THE MOSELLE RIVER CROSSING

Combat Studies Institute
Fort Leavenworth, Kansas

DTIC
ELECTED
FEB 4 1985
S D
B



REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) The Moselle River Crossing, Offensive, Deliberate Assault, River Crossing		5. TYPE OF REPORT & PERIOD COVERED student paper
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) R. Hoffman, G Do, T Beaver, J Cofer, R Curasi, D Hahn, R Inouye, H Krimkowitz, P Kruger, M Lents, D Lyon, S Moody, R St. Onge, J Wall,		8. CONTRACT OR GRANT NUMBER(s) M Williams
9. PERFORMING ORGANIZATION NAME AND ADDRESS Combat Studies Institute, USACGSC ATZL-SWI, Ft. Leavenworth, KS 66027		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Combat Studies Institute, USACGSC ATZL-SWI, Ft. LEavenworth, KS 66027		12. REPORT DATE 23 May 1984
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES
		15. SECURITY CLASS. (of this report) unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) APPROVED FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES A battlebook prepared by students of the US Army Command and General Staff College under the supervision of Combat Studies Institute as part of the Battle Analysis Program.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) History, Case Studies, Military Operations, Tactical Analysis, Battles, Military Tactics, Tactical Warfare, Antitank Warfare, Armor, Artillery, Infantry, Tanks (Combat Vehicles). Free Terms: Battle Analysis, World War II, Moselle River, Offensive, Deliberate Assault, River Crossing.		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) During the race across France after the break out of Normandy, the pace was slowed before the city of Matz. BG James A. Van Fleet's 90th Infantry Division provided a spearhead for the XX Corps advance. The crossing of the Moselle River in November in the face of extensive enemy fortifications provide valuable lessons in the conduct of hasty river crossing operations under fire.		

The Moselle River Crossing

(An Offensive, Deliberate Assault, River Crossing
conducted by the US 90th Infantry Division against
the German 19th Volksgrenadier and 416th Infantry
Divisions)

9-19 November 1944

Prepared by: Staff Group C, Section 16

Major Robert J. Hoffman, Staff Group Leader	
Lieutenant Colonel Gab Hyun Do	Major Paul Kruger
Major Thomas F. Beaver	Major Miklos A. Lents
Major Jonathan H. Cofer	Major David M. Lyon
Major Richard M. Curasi	Major Steven J. Moody
Captain Daniel A. Hahn	Major Robert J. St. Onge
Major Randall R. Inouye	Major John W. Wall
Major Harry A. Krimkowitz	Major Michael S. Williams

Submitted to the Combat Studies Institute, U.S. Army
Command and General Staff College, in partial fulfillment
of the requirements for subcourse P651, Battle Analysis



Fort Leavenworth

May 1984

Accession For	
NTIS GENI	
DTIC TAB	
Unannounced	
Justification	
By _____	
Distributed	
Available	
Approved	
Dist	
A-1	

ABSTRACT

COMMON REFERENCE: Moselle River Crossing, 9-19 November 1944

TYPE OPERATION: Offensive, Deliberate Assault, River Crossing

OPPOSING FORCES:

US: 90th Infantry Division

ENEMY: 19th Volksgrenadier Division
416th Infantry Division

SYNOPSIS: During the race across France after the break out of Normandy, the pace was slowed before the city of Metz. BG James A. Van Fleet's 90th Infantry Division provided a spearhead for the XX Corps advance. The crossing of the Moselle River in November in the face of extensive enemy fortifications provide valuable lessons in the conduct of hasty river crossing operations under fire.

BIBLIOGRAPHY:

Eisenhower's Lieutenants, Weigley.
Grand Strategy, Ehrman.
The Lorraine Campaign, Cole.
The Unknown Battle, Kemp.
War As I Knew It, Patton.
90th Division after action and staff reports.

INTRODUCTION

If not intuitively obvious that a river crossing is one of the most difficult of all military operations, one need only to attempt one to appreciate this fact. Furthermore, anyone who has served in Europe has been duly impressed with the fact that any European conflict will be replete with river crossings. For this reason, Staff Group 16C has selected a European river crossing upon which to conduct our battle analysis. More specifically, we will analyze the Moselle River crossing of the 90th Division. During the drive on Metz in November 1944, the 90th Division attacked across and beyond the flood-swollen Moselle River in what General Patton said was "one of the epic river crossings of history."(I-1) We shall analyze this river crossing using the format provided in the P651 course syllabus. In Chapter 1, the subject will be defined and source materials identified and evaluated. Chapter 2 will be a review of the strategic setting, while Chapter 3 will review the tactical setting. The action will be described in Chapter 4. The concluding section, Chapter 5, will assess the significance of the 90th Division's actions in conducting the river crossing of the Moselle River.

CHAPTER 1-INTRODUCTION TO THE BATTLE OF METZ: 90th Infantry Division Offensive Operations in Crossing the Moselle River

The 90th Infantry Division operation to cross the Moselle River was conducted from 9-19 November 1944. The 90th Division, along with the 5th and 95th Infantry Divisions and 10th Armored Division was part of the XX Corps, commanded by General Walton H. Walker. The 90th Division was commanded by BG James A. Van Fleet, who had taken command on 15 October 1944. He was promoted to major general on 15 November 1944.

The composition of the 90th Division was as shown below:

ORGANIC UNITS

357th Infantry Regiment

358th Infantry Regiment

359th Infantry Regiment

90th Recon Troop (Mech)

315th Engineer Combat Battalion

315th Medical Battalion

90th DIVISION ARTILLERY

343d FA Battalion (105 Howitzer)

344th FA Battalion (105 Howitzer)

915th FA Battalion (105 Howitzer)

345th FA Battalion (155 Howitzer)

SPECIAL TROOPS

790th Ordnance Light Maintenance Company

90th Quartermaster Company

90th Signal Company

Military Police Platoon

Headquarters Company

Band

ATTACHMENTS

537th AAA AW Battalion (MBL) (15 JUL 44-26 MAY 45)

C Co, 81st Chemical Mortar Battalion (13 NOV 44-6 JAN 45)

135th Engineer Combat Battalion (9 NOV 44-21 DEC 44)

241st FA Battalion (105 Howitzer) (8 NOV 44-14 NOV 44)

C Btry, 558th FA Battalion (155 Gun) (11 NOV 44-16 NOV 44)

773d TD Battalion (SP) (2 NOV 44-9 MAY 45)

The Moselle River crossing occurred in the vicinity of Cattenom, France, north of Metz. The XX Corps was opposed by elements of the German LXXXII Corps. Fort Durant was garrisoned by a battalion of the 74th Regiment, 19th Volksgrenadier Division. The 74th Regiment also held Fort Koenigsmacker and positions in Metrich. Much of the fight was carried by the German 416th Infantry Division; however, late in the fight, the 25th Panzergrenadier Division procured some gasoline and trucks and joined the fray on the night of 11-12 November.

The sources of information concerning this battle are somewhat limited. They include history books, articles in periodicals and after-action reports. A starting bibliography was provided as part of the course advance packet. Four books were listed along with four items in the classified library. More sources were identified from the bibliographies of these publications. No oral history interviews were conducted as part of the research.

An article entitled "The Moselle River Crossing of the 90th Division", written by Dr. Hugh M. Cole, Historical Division, Special Staff, United States Army, appeared in the May 1950 edition of Military Review. The article was condensed from a chapter in Dr. Cole's book, The Lorraine Campaign, one of a volume in the series The U.S. Army in World War II. The article contained a very good account of the battle from the American point of view. However, it falls short in describing German actions and countermoves to U.S. actions.

The value of Cole's book, The Lorraine Campaign, was somewhat diminished because his article captured so much of the detail essential to our particular report. The maps in the book were very good however, and provided more detail than did those in the article. It also gave a good summary of the actions of the 90th Division in Europe prior to the river crossing.

The second most valuable source document was the 90th Infantry Division's after-action report for the month of November 1944. Obviously, this document was prepared by personnel on the scene, thereby capturing much of the big picture with as much accuracy as the reports submitted allowed. There are several shortcomings of this type of documentation. Because it was written virtually as the action was taking place, there is little or no analysis of decisions and actions. Also, it tends to concentrate on the good things that the Division did, since it is the unit's own account of the battle. Finally, an after-action report contains little, if any, detail concerning the enemy force.

John Ehrman's Grand Strategy, Volume VI, was an excellent resource on both Allied and German strategy pursued during each phase of the war. While for the purposes of this project interest was primarily in land component strategies, Ehrman's work includes air and sea strategies as well.

Russell F. Weigley's Eisenhower's Lieutenants contained brief but substantial comments on the key events and principal commanders in the Lorraine campaign. In particular, it provided information about the two Division commanders that the 90th Division had during the battle.

War As I Knew It by George S. Patton, Jr. contains useful overall comments concerning the 3d Army attacks of November 1944. In particular, this book zeroed in on critical events and the key decisions attendant to them. On the other hand, Dwight D. Eisenhower's Crusade In Europe was not of much value. There were only a couple of lines concerning the battle for Metz.

Major Charles E. Wright's article in the May-June 1948 issue of the Armored Cavalry Journal, "Moselle River Crossing at Cattenom" is an excellent short article on the 90th Division crossing at Cattenom in November 1944. This article was interesting because it provided a perspective that differed from Cole. While discussing other aspects of the operation, Wright's article highlights engineering and bridging efforts in support of the river crossing.

An article in the February 1947 Military Review, "3d Infantry Division Crosses the Meurthe" by LTC W.B. Rosson, provides information on another unit's river crossing operations under similar weather and during the same time frame as the 90th's crossing of the Moselle.

A good source concerning U.S. Army river crossing doctrine at that time is Field Service Regulations: Operations (FM 100-5). This document was published in June 1944, only months before the subject operation.

Fourteen pages were devoted to river crossings, although there is no indication that the regulation was read by members of the the 90th Division. Infantry School Quarterly published "Attack of the Riverline" in 1948. Most of the principles and ideas presented are similar to those of the Field Service Regulations mentioned above.

Panzer Battles by F.W. von Mellenthin provided some information about the German units which faced the 90th Division. In addition, it contained some insights concerning German doctrine and morale at the time of the battle. The author did not write the book specifically about this battle, so little detail concerning the operation was provided.

"Smoke Over the Moselle", written by Lieutenant Colonel L.B. Cottingham in Infantry Journal in 1948 was helpful because it provided information about other units of the 3d Army and how they crossed the Moselle. The value is somewhat diminished however, because it is presented from the perspective of a chemical officer.

"Bridging at Thionville", by LTC William C. Hall in The Military Engineer, April 1948 issue, focuses on the 95th Division's crossing of the Moselle River in November 1944. It provides as excellent description of the XX Corps plan and the conditions that inhibited bridging and river

crossing operations. The XX Corps deception plan to support the river crossing is also addressed.

CHAPTER 2-STRATEGIC SETTING

A. FROM THE WESTERN ALLIES PERSPECTIVE

The Western strategy in 1944 was to rely on its great production capability and on its maritime power. The Allied surface fleets controlled the sea-lines of communication across the Atlantic Ocean. The Italian fleet was destroyed in the previous year. The remnants of the once great German fleet was now limited to coastal patrols. During the first half of 1944, the German U-boats were virtually ineffective against Allied shipping. Of the vast mass of ships in the English Channel in June 1944, only five were sunk by U-boats; and the total Allied loss by U-boats for the month was only eleven vessels. By the Fall of 1944, the Allies had sunk 205 U-boats.(2-1)

The Allied invasion of the European continent was known as Operation OVERLORD. "The Supreme Commander, General Eisenhower, was directed by the Combined Chiefs of Staff to enter the continent of Europe and, in conjunction with the other Allied nations, undertake operations aimed at the heart of Germany and the destruction of her armed forces."(2-2) . The plan called for the allied forces to be at the river Seine by D+90. The allied forces actually

reached the river by D+74 on 15 August 1944.

The problem facing General Eisenhower now was, where to go from here? The political goal was the capture of Berlin. In order to accomplish this, it was decided that the industrial center of Germany, the Ruhr Valley, must be controlled. It was generally felt that the Germans would attempt to defend this area with the majority of its forces. The allies would have the opportunity to defeat the Germans in battle in this area and would then be able to move quickly across the north German plain to Berlin. (2-3)

The post-OVERLORD plan called for a gradual advance on a broad front. It was hoped that the Germans would be pushed back into their own lands in the Aachen area by May 1945. By this date the front should have been somewhere between Verdun and Metz.(2-4) The main advance would be along the traditional invasion routes through Maubeuge and Lie`ge into northern Germany. This advance would be supported by a secondary attack along the Verdun-Metz line.

The Western Allies were now deploying an increasingly larger force on the European continent. At the same time the Germans were mobilizing and using the last of their reserves. The strength of the American and British forces had increased from 14 million men and women in the middle of 1943 to 16.7 million in the summer of 1944.(2-5)

By the summer of 1944, the United States was providing the majority of the Allies fighting strength. The Allied strategy to direct the American war effort during the early period of the war to its great material production capability and to delay the introduction of the US forces into the theater until 1944 was now paying off. In July 1944, the American armed forces consisted of 11.8 million men and women. At the same time, the British had 5 million in their military. There were the same number of American and British divisions in contact with the enemy in March 1944. In July the difference increased in favor of the Americans. There were 48 American divisions and 38 British or British-controlled divisions in action on the continent.(2-6)

By the fall of 1944, the Western Allies had removed the governments of Italy, Rumania, Bulgaria, and Finland from Germany's control. The government of Turkey severed diplomatic and commercial ties with the Germans. The Provisional Government in France had been established.

B. FROM THE GERMAN PERSPECTIVE

In the fall of 1944, Germany was in effect fighting a four front war. In the east Hitler's armies were under constant pressure from the Baltic to the Black Seas.

Russian forces had linked with Yugoslav partisans and captured Belgrade. Further north, the Russians had reached the Danube River south of Budapest and were also attacking along the East Prussian Frontier.

On the southern front German forces had delayed through successive defense lines in Italy and now held positions just south of Bologna. The Germans had also been unable to prevent Western Allied forces from landing in Greece and reinstalling the exiled Greek government in Athens.

At the western front German units had finally stalled the rapid Allied advance at the Netherlands border in the north. Although the West Wall had been penetrated at Aachen, the remainder of that defense line was still under German control. In fact, German forces were still defending portions of France from the Luxembourg/German border to Belfort, France, near the French/Swiss border. The valuable port of Antwerp had been lost, but its use by the Allies was still denied by German control of the sea approaches to the port complex.

The war against Allied bombers comprised the final front. The Allies had briefly reduced saturation bombing of German cities to support the invasion of Normandy. However, by October, industrial centers were subjected to increasing numbers of raids by Allied strategic bombers. Cities in the Ruhr were especially hard hit.

The bleak situation faced by the German forces on all fronts led to a series of drastic steps by the government to increase its ability to wage war. The draft age was lowered from 17 1/2 to 16 years. In addition, men were transferred into the army from the navy, air force, and industry. Forty additional divisions were raised using these techniques from August through December of 1944. Most of them were employed on the western front and were instrumental in stemming the Allied advance.(2-7)

As late as the end of 1943, the German economy had not been fully mobilized for war. It was estimated in December of 1943, 1.8 million workers were employed in basic industries and 5.2 million by the armaments industry. Yet, 6 million workers were still producing consumer goods.(2-8) Although the Ministry of Armaments and War Production, under Albert Speer, succeeded by the fall of 1944 in steadily increasing the ratio of armaments to consumer goods being produced, three factors combined to reduce overall production.

The first of these was the shortage of workers. Men were being inducted into the service and women were never successfully mobilized as industrial workers.

The second factor was the Allied bombing campaign mentioned earlier. As the table below reveals, fuel

production was especially effected.

GERMAN INDUSTRIAL OUTPUT (Tons per month*) (2-9)

	Aviation fuel	Gasoline fuel	Diesel fuel	Small arms	Ammo
May	156,000	93,000	74,000		
June	53,000	76,000	66,000		
July	29,000	56,000	62,000	293,221	306,000
August	12,000	60,000	65,000	228,173	310,000
September	9,400	48,000	77,300	195,652	321,000

*except small arms

The final factor was the shortage of raw materials. The loss of Rumania, France, and Belgium during the summer campaigns meant the accompanying loss of coal and oil sources. By capturing these countries, the Allies formed a land blockade which achieved much more than their sea blockade had ever accomplished.

In spite of all these difficulties and the apparent futility of continued resistance, Hitler persisted in carrying on the battle. According to one source, he believed that the Allies could not continue to work together and, if they did, he preferred to see Germany destroyed than surrender.(2-10)

The German nation seemed unwilling to separate their fate from the leader who had brought them to this point. Open opposition to his course of action did not come from the military, either. By this time the German navy and air force had lost most of their power and prestige. Army leadership was dissuaded from action by a serious purge

after the unsuccessful bomb plot against Hitler in July of 1944.

The net effect was that Hitler remained in control of Germany's destiny. In October he began to plan and gather forces for a grand counteroffensive to be launched against the Western Allies when the necessary conditions presented themselves. In the meantime, the enemy in the west was to be held in place so that the Westwall (Siegfried Line) could be made ready to defend the homeland.(2.11)

CHAPTER 3- REVIEW OF THE TACTICAL SITUATION

A. STUDY OF THE AREA OF OPERATIONS

Of the factors which impacted on the course of the 90th Division's operation, probably the most significant were the terrain, the weather and how they combined to form a foe almost more formidable than the enemy himself. Initially, three points on the Moselle were taken under consideration as possible crossing sites: Rettel, Malling and Cattenom. The Rettel area was ruled out because it lay under German observation from heights to the northeast. Malling and Cattenom, lying south of Rettel, were more favorable. Here the Moselle flowed swiftly along a winding course and had a flood plain with moderate banks. Under normal conditions, the Moselle had a width of 300 to 350 feet, however, the ground contiguous to the river was predominantly marshy and subject to shooting during wet periods. Although posing little restriction to assault boat crossing, it definitely limited the development of bridge sites to those points where civilian bridges had previously existed. Thus, the terrain telegraphed the plan for floating bridge construction to the enemy once the crossing had been initiated. Beyond lay one-half to one mile of

flat land, ending in abrupt slopes leading into long wooded ridge lines which extended perpendicularly back from the river valley. Cattenom lie on the south edge of the 90th Division zone under the guns of Fort Koenigsmacher, perched on the northern terminus of the ridge line.(3-1) Approximately 2km north of the river, a large wooded expanse, the FORET DE CATTENOM, containing an adequate road net, provided an excellent divisional assembly area. Its sole disadvantage was that its forward slope location necessitated entry only during darkness. Due to the open area from the FORET to the river, complete observation was available during daylight from the high ground across the river. Additionally, the FORET was enfiladed by enemy positions on the bald knob, Le Stromberg, west of the Moselle and just outside the XX Corps north boundary.(3-2)

Through the center of the Division zone ran heavily wooded, rugged ridge lines on which the French had constructed some of the main fortifications of the Maginot line. The initial obstacle was a group of forts and field works clustered around the little village of Metrich, which blocked the main road south from the crossing site at Malling. Northern parts of the Division zone had some natural features which would favor establishment of a blocking position on the left flank and allow a pivot by the main attack toward the southeast. A long ridge line stretching southeast from Sierck-les-Bains through Freching, with its highest point, L'Altenberg, provided a natural defensive position for the exposed left wing of the 90th

Division advance. This position would cover the two important approaches by which the enemy might strike at the American crossing sites: the Saarburg highway from the northeast, and the Merzig-Kerling road from the east. The 90th Division's drive was to cover some 16 miles (3-3). The road net in the Division zone east of the Moselle was hardly adequate, even under the best weather conditions. Additionally, the main axial road running southeast from Koenigsmacher along a small stream called the Canner was unusable unless the Americans held the ridge line which it skirted. This ridge line, in the center of the zone, was a serious obstacle. It was heavily forested and was broken across the grain at frequent intervals by streams and gullies. It was also rendered more difficult as a military barrier by the Maginot line and could be used to defend against an attack lengthwise along the ridge chain (3-4). Due to the enemy's observation advantage it was required that the assault not only be initiated under darkness, but also that the leading elements drive forward and secure before daylight a toehold on the foothills to deny the enemy close observation of the crossing sites. With bridging operations especially limited by terrain obstacles to the Cattenom and Gavisse bridgesites, initiation of bridging operations was entirely dependent upon removal of the enemy's close direct observation. Crossing would take place at both Malting and Cattenom to secure high ground east of the Moselle and capture the Koenigsmacher fortress (3-5).

After two days of artillery preparation, the troops began

shuttling on the night of 7 November without benefit of moonlight and under incessant rain on slippery, narrow, tortuous roads (3-6). Rain had been falling for several days and the Moselle was rising steadily. Flood waters increased the difficulties attendant to the crossing, but they also acted to lessen the dangers on the enemy bank. The extensive mine plots prepared by the Germans weeks earlier were flooded over, allowing American assault craft to pass them with impunity. Also, fox holes and rifle pits dug along the east bank were water filled and unattended (3-7). The first assault boats were pushed into the raging Moselle at approximately 0330 hours on 9 November; by 0500 the two leading battalions were on the east bank. Under steady rain the Moselle continued to rise rapidly, causing the loss of many boats on the eastern bank as crews were unable to hold them after the infantry debarked in waist deep water. The raging water also made it impossible for the engineers to anchor their cables securely for footbridges. Meanwhile at Malling, a support raft was launched and immediately capsized with its first load due to the swirling waters. By now, the Moselle had expanded from its normal 350 foot width to 2400 feet, and rain continued to fall. Many boats were lost, boat crews had to be doubled, and movement in general was slowed due to the steady rain, the swollen river, and the mud-laden countryside (3-8).

Early morning fog on 10 November allowed the 3d Battalion to march under cover to attack the Metrich works. Additionally the fog helped two companies succeed in bypassing Fort

Koenigsmacher and dig in on the Bois-de Elzanze ridge.

Meanwhile, no armor or TD support was able to cross the raging Moselle, therefore covering fire depended on batteries sited on the west bank with gunners working in mud to their knees and firing around the clock. Needless to say the infantry was tired, soaked and numbed with cold. The Moselle continued to rise reaching widths of 3000 feet near Cattenom. While a few power launches and engineer rafts were able to battle their way across the raging river, many other craft were sunk by submerged fence posts or swept downstream. The causeway leading to the west end of the bridge at the Malling site was now under five feet of water and it would be some time before trucks, tanks and TD's would be able to roll across. Despite the weather and the raging river, some resupply reached the across the Moselle, and a few 57mm AT guns were successfully ferried across to support the infantry. Rain continued to fall and by day's end the Moselle reached widths up to 1.5 miles with water standing in the streets of both Cattenom and Gavisse. The Moselle finally crested at 1800 hours on 11 November and began receding at the rate of .75 inch per hour. The waters soon began receding much more rapidly and by midnight the first of the M4 artillery tractors towing engineer trailers was able to cross the causeway leading from Gavisse.(3-9) By 0200 on the 12th the engineer bridge construction trucks with heavy payloads were able to cross. Considerable supplies and some trailers loaded with 1/4 ton trucks were ferried across the river. It would be at least dawn before the water would recede to fording depth of tanks and

self-propelled tank destroyers. On the 12th the reserve battalion had also been boated across the river with much difficulty. By midnight of 12 November the Moselle had ebbed to a point where heavy rafting could be done. Additional tanks, tank destroyers and a number of jeeps had been ferried across. However, for the infantryman in the forward positions there were still no dry clothes or blankets to warm himself during the cold November nights. (3-10)

Clearing weather conditions on the 13th required smoke to be used to insure freedom from enemy artillery fire to complete the Cattenom bridge. Receding water made bridging and crossing easier, but it also revealed the hazards of the earlier planted minefields. As the Cattenom bridge was complete, a DUKW clambering up the far bank was blown sky high disclosing that the bridge was in the middle of a minefield. After a five hour delay to clear mines the bridge was completed. Then, using this single bridge all organic units and attachments of the 90th Division, plus supporting artillery, were able to cross the Moselle by 1500 on 14 November. As the weather cleared, temperatures dropped and fortunately troops in the bridgehead had overcoats, blankets and dry socks by the afternoon of 14 November, the first time in six days. Fighting continued through 19 November under cold and occasionally drizzly periods but weather conditions definitely improved compared to the beginning of the battle. The 11 day operation by the 90th Division was fought through terrain of considerable natural difficulty, made

only worse by the Autumn rains and chilling temperatures.(3-11)

3. COMBAT EFFECTIVENESS OF THE OPPPOSING FORCES

The opponents in this fight were the 90th US Infantry Division (90th Div), subordinate to the US XX Corps, and the 19th Volksgrenadier Infantry Division and 416th Infantry Division of the LXXXII Corps, German First Army. The 90th Division consisted of three conventional infantry regiments and supporting artillery, engineer and reconnaissance elements and was augmented by attachment of an additional six artillery battalions, two tank destroyer battalions, one tank battalion and the 1139th Engineer Combat Group for direct support of the river crossing and assault operation. Additionally, inclusion of artillery assets from XX Corps and from the 10th US Armored Division, which would later follow the 90th Div, gives a total of some twenty artillery battalions firing in support of the crossing.

The 90th Div was opposed by the 19th Division in the south, with three conventional infantry regiments; and by the 416th Division in the north, originally with two regiments of three battalions of infantry, but reorganized prior to the battle with three regiments of two battalions each. The Germans possessed no tanks or assault guns in the initial stages of this battle.

However, a so-called Bazooka Battalion (Panzer zerstoerer, AT Bn, P-1) had been identified in the area of the 74th Infantry Regiment, 19th Div, in early November. At the time, no comparable unit had been encountered in the Wehrmacht and the battalion was thought to be a stop gap measure. The unit was large, four companies of 140 men each, yet the battalion's personnel were mainly 17 and 18 year old Navy recruits, former AA troops and Luftwaffe personnel who had been pressed into serving with this unit. The morale of this unit was reported to be very low. Overall, the fighting quality of the 19th (Rubbish Pile) Division and of the 416th (Whipped Cream) Division was also reported to be very low and the divisions were stretched over a very wide front.(3-12)

The 90th Div and the two German Divisions were committed and directly opposed. The 10th US Armored Division was given a follow and support mission and could be considered reinforcing the 90th Div effort once the crossing was accomplished and the bridgehead established. The 90th Div staff had originally assessed that no Panzer (Pz) or Panzergrenadier (Pzg) divisions had recently been identified on the XX Corps front, and that no direct confrontation was expected with panzer units. (The only Panzer Division reported in the area was the 11th Pz, but it was otherwise committed). In fact, German First Army was without reserves and direct communication was needed between Oberkommando West (OKW), Field Marshal Von Rundstedt, and Hitler to release the 25th Pzg Div from a location approximately 50

miles east of the action. Ten tanks and two Pzg battalions of the 25th were to enter the action three days after the 90th Div's assault. Early on, however, the Germans had not one tank to bring against the attacking 90th Div.(3-13)

Although the respective sides enjoyed rough numerical parity in ground fighting strength, the 90th Div with attached and supporting units had a distinct advantage in tanks, tank destroyers, artillery and engineer support. Some of the 90th Div's power was useless against the extensive field fortifications left over from the original Maginot Line, foxholes, dirt pill boxes and emplacements which were strung out in depth. This, and the rising river afforded the defender an actual advantage.

In the 90th Div's zone of advance, the Germans had spread a thin outpost line along the river bank, had supported it with units of roughly squad size supported by machineguns, and had dispersed these units on a line generally parallel to the river. A second line of approximately the same strength had been established a distance of 1500-2000 yards to the rear, with reserves thought to be in the towns of Distroff, Elzange, Inglange, Budling and Oudrenne, about 7-10 Km farther back. In the actual crossing zone, the enemy strength was estimated to be two infantry battalions and two companies from the above mentioned Bazooka Battalion. In addition, intelligence held that elements of the two opposing divisions could be relieved

from other sectors and pitted against the 90th Div's crossing within eight hours. Intelligence analysis concluded that surprise, although essential for success, could not be realized; that the enemy would defend from prepared positions; fall back to prepared fortifications and bring up reserves; and, finally, would counterattack with up to company sized units reinforced with tanks. This was the German doctrine of the "elastic defense." (3-14)

The technology which was available to both sides was roughly equal. However, the lack of German tanks and antitank guns (assault guns) seems to have forced them into establishing and fielding a rather poorly trained, poorly motivated bazooka unit as a substitute. The effectiveness of light antitank weapons is not in question. In this case, they were a poor substitute for the armored forces which were doctrinally required. Further, the artillery in the 416th Div and, to some extent, in the 19th Div consisted primarily of obsolete, left over fortress pieces and captured Russian 122mm howitzers. The terrain and the weather would have supported the forward employment of tanks and assault guns in the "elastic defense" and such was in keeping with the German doctrine. Such technology was not immediately available to the Germans on 9 November, and they had to rely on pure infantry fighting strength. For the Americans, the rapidly rising river coupled with the canalizing terrain hampered the early crossing and forward employment of tanks, tank destroyers and artillery.

Call the technological battle a draw. External factors prevented the use of available technology for both sides.

From a logistical point of view, the 19th and 416th Divisions appear to have been written off as a loss by the German High Command. Although the German First Army had nominally been given priority for personnel replacements and supply, nothing in the "Rubbish Pile" or "Whipped Cream" Divisions reflected this. The German supply system had been badly damaged by bombing. Ammunition, in particular, was critically short. As discussed earlier, much of the artillery was obsolete and the remainder consisted of captured pieces for which there was little ammunition. General Balck, Commanding Army Group G, once commented that he had never commanded "such a mixture of badly equipped troops (3-15)." The German logistical system had so broken down that the one opportunity that they may have had to blunt the 90th Div's assault, i.e., a counterattack by the 25th Pzg Div, was held up for at least two days for lack of fuel. The 19th Infantry Division had acquired the appellation "Rubbish Pile" due to heavy losses suffered since activation in August. Assignment of the Bazooka Battalion to this 8500 man division in place of a standard antitank battalion, and the rag tag composition of that unit would tend to reflect the condition of the rest of the division. Personnel in the regiments included young, fanatic Russian volunteers and older Russian civilian workers.(3-16) The 416th Div had come originally from Denmark, as had the 19th, but entered battle

only recently. The "Whipped Cream" Division consisted of older troops, average age thirty eight, who had never been in combat. The Germans were using a rather wholesale unit rotation system, but by this time in the war were forming and deploying units which were neither skilled nor experienced. Politics resulted in sending green troops into battle. The enemy which the 90th Div faced was not the German Army's first team.

During the October lull which allowed most of Patton's Third Army to refit and replenish, the 90th Div engaged in the detailed logistical planning which the need to support considerably farther forward than normal demanded. During October, the Division experienced critical shortages of Class III and Class V, and the issue of gasoline, artillery rounds and mortar ammunition had to be intensively managed. On the nights of 7 and 8 November, the Division occupied an assembly area in the FORET DE CATTENOM where the assault troops were fed and issued extra rations as well as ammunition for individual weapons. It was here where plans were finalized to ferry unit supplies across the river by the 179th Engineer Company. Supplies were built up and boats, ferry and bridging equipment as well as supply dumps were placed farther forward than normal in order to facilitate future operations (3-17).

The biggest obstacle to efficient resupply once the assault began was the rising, swollen Moselle River and the mud flats which ringed the riverbed. The nightly ferry service begun on 9

November concentrated on getting food and ammunition across the river to the wet, tired troops, and increased to a 24 hour a day operation. Nevertheless, by 11 November assault elements evidenced shortages in rations and ammunition, as well as in socks, dry clothing and blankets. Until the bridge was constructed at Cattenom on 13 November, it appeared that the assaulting regiments had been cut off from their supplies. Despite the extensive planning, the environment had a major impact on the conduct of the operation. A significant problem, given the role of the engineers in this action, was engineer resupply. The extensive plans which had been drawn assumed a narrow or normal river crossing. The assault boats which became the mainstay of the combat as well as the combat support mission were on the critical list in the ETO and were strictly allocated. A similar situation existed for bridging material. Many bridge floats were damaged in handling or by enemy fire. The key to logistical success by the 90th Div was improvisation when carefully drawn plans could not be supported (3-18).

Personnel replacements were handled on an individual basis and were closely linked with the logistical ferry operation. During November, the Division received 552 replacements and returned 987 troops to duty from former casualty status. From this flow of personnel, the evacuation and replacement policy of the Division appeared to be effective (3-19).

The shortages in engineer equipment and the terrible

terrain and weather slowed the 90th Div's assault considerably. Although a great deal of planning had been done, the plans did not consider a Moselle River and valley flooded to a width of over two and one-half miles in places. More significant is the appalling lack of trained, experienced personnel on the German side.

The 19th and 41st Divisions, although definitely not Germany's finest, were organized for combat effectively and were particularly well suited to perform a strictly defensive mission. With the resources they had been given, namely, second rate antitank and artillery, they performed well. Command and control in each of these divisions was exercised through regimental and battalion commanders whose units operated in small unit enclaves over extended widths and depths. The fact that command and control was effective at all is significant considering the low morale and diverse composition of these units. Command, control and communications was aided by the Germans having taken advantage of the October lull and establishing wire communications to outposts, foxholes, bunkers and strongpoints in successive positions. The major problem in German command and control appears to have been political. The decision to commit the 25th Pzg Div required in excess of twenty four hours to make, and even then had to be made by Hitler himself. The course of this battle would have changed considerably had the tanks and assault guns been available a scant twelve hours earlier. By this time in the war, Generals

Balck (Army Group G) and Knobelsdorff (First Army) had already taken to sidestepping orders by committing second and third rate troops to areas in which they were directed to focus extensive and tactically unsound efforts (3-20).

The 90th Div was well trained and well organized for combat with three infantry regiments, an engineer battalion, tank and tank destroyer battalions, supporting artillery and antiaircraft artillery. Significant was how XX Corps tailored additional assets for the purpose of the river crossing and assault operation through attachment of the 1139th Engineer (Combat) Group which trained and fought with the 90th Div. Review of the 90th Div's staff papers from this period reveals clear operations estimates and orders, supported by field orders consisting of mission type statements which clearly transmitted the commander's intent and provided additional intelligence, operational and logistical data. To support the river crossing, a communications system was planned which included wire communications from supply dumps to assembly areas, to the forward command post at Cattenom and down to the river at the bridge site. Wire was the primary means of communication.(3-21) Backup systems consisted of foot and motor messenger and limited use of radio. Nevertheless, it was remarked that the German Wireless Intercept Service reaped much useful information from American carelessness on the telephone and radio. During the course of the assault, the 90th Div CP moved only once, from a forward CP at Cattenom to the fortress at Koenigsmacher on 13-14

November.

Intelligence assets available to the Germans consisted of signals intelligence from the Wireless Intercept Service and human intelligence from an extensive net of collaborators, sympathizers and agents. Weather prohibited the use of aerial reconnaissance by either side. This was particularly damaging to the Germans whose front line elements were completely surprised by the American attack as the bad weather, poor training and morale and the encroaching river also hampered direct ground observation. Apparently, OKW and Army Group G had knowledge through SIGINT of XX Corps plans, but there is no evidence that such intelligence was disseminated to the front line units. The majority of the combat information and intelligence available to the forward divisions came from aggressive patrolling and front line reconnaissance.

Review of the intelligence estimate and order of battle summaries from the 90th Div's history indicates that they had considerable knowledge of enemy composition and disposition east of the Moselle. For several days prior to the crossing, the XX Corps' 3rd Cavalry Regiment and Divisional recon elements displaying 3rd Cav insignia conducted extensive patrolling in order to obtain information as well as deny information to the enemy. Civilians in the vicinity of Cattenom were evacuated as an additional counterintelligence/OPSEC precaution. The fact that the Germans were surprised by the crossing was mentioned

earlier. Captured prisoners of war and captured documents substantiated the view that surprise had indeed been achieved (3-22).

Although four daily tactical air recce missions had been allocated to the 90th Div, weather prohibited its use. ULTRA intelligence was not disseminated to division level. Although there is evidence that ULTRA was tracking the movement of the 25th Pzg Div and its commitment to the 90th Div sector, there is no reference to the unit in the 90th's intelligence reports until direct contact was made. In fact, until actual contact between tank elements of the 90th and the German 25th Div was made, 90th Div intelligence personnel held that the 11th Pz Div could reinforce the Germans in sector.

The 90th Div had learned the value of effective interrogation of prisoners of war. During October a total of 3742 POW were captured. During the period 9 to 15 November, the Division took approximately 550 POW. It is a significant commentary on the state of the German morale that, when captured, POW provided detailed and specific information on unit composition, disposition, state of readiness and plans. The intelligence annex to the OPORD for the river crossing and assault contained the following statement: "It should be impressed upon all personnel that POW and documents are the chief source of enemy information." Intelligence had a profound influence on the American planning for and conduct of the battle

and was integrated to the maximum extent into operational plans and orders. Intelligence was critical if the river crossing were to proceed according to doctrine.

The US doctrine for an offensive river crossing covered 10 pages in the Field Service Regulations, FM 100-5 dated 15June 1944. There were no significant changes from the previous FSR, FM100-5 dated 1941. The foundation of this doctrine was to seize three successive objectives on the enemy side of the river. The first is the attainment of a position which will eliminate effective, small arms fire from the crossing front, the second is a position which will eliminate ground-observed artillery fire from the bridge sites and the third position which will eliminate all artillery fire from the bridge sites and will provide adequate maneuver space on the enemy side of the river. Other doctrinal ideas discussed in the regulation are; attacking on as broad a front as possible, gaining air superiority at the crossing sites, getting as much combat power across as quickly as possible and using the reserve forces to exploit the crossing site of greatest success. The FM also addresses specific aspects of a river crossing such as; use of airborne troops, reconnaissance, use of engineer troops, fire support and the use of smoke.(3-23)

The 90th Division followed this doctrine in its operational plan. The plan called for the securing of the far shore with as

much infantry combat power as possible during the first day. This initial objective was met when 8 infantry battalions crossed the first day and secured a bridgehead area of 3 kilometers. The next day the bridge was to be completed with tanks and tank destroyers crossing to help secure the next objective. This was delayed for several days because of river flooding and the strength of the Maginot Line forts. Accurate German artillery fire also prevented completion of the bridges. By the third day, the bridgehead size was doubled and Ft. Koenigsmacher reduced. The seizure of this fort plus the lowering river level allowed for completion of the bridging operations. Tanks, tank destroyers, artillery and other support crossed on the fourth day in time to beat back strong counterattacks. This firmly established the bridgehead and completed the third objective.(3-24)

There are other doctrinal issues which apply to the division's river crossing. Reconnaissance of the near shore before the attack was accomplished by the 3d Cav Group or by soldiers of the 90th Division using 3d Cav Gp vehicles and uniforms. Just prior to the operation, the 90th curtailed patrolling to maintain security, making a conscious decision to limit reconnaissance activities. The plan also called for rapid crossing of combat power but the crossing of tanks, tank destroyers and other heavy equipment was delayed for the reasons previously noted. They did manage to cross 8 infantry battalions in the first 20 hours. The crossing operations had

the attached engineers and he easily to train with infantry units which directly follows a tenet from FM 100-5 about the use of engineer support. The planned use of reserves was to follow and exploit the greatest success, as described in the doctrine. A final note on doctrine concerns the use of smoke. The division used smoke generator platoons, a 4.2 inch chemical mortar company and 2-105mm artillery battalions to screen the bridging sites.(3-25) The final analysis of this river crossing is that the plan adhered closely to the current US doctrine at that time, but its execution was delayed by the weather and the Maginot Line fortresses.

The training of the 90th Division began with their activation on 25 March 1942 at Camp Barker, Texas. They underwent extensive training in the United States which included several division field exercises in Texas during 1942, participation in the Third Army Louisiana maneuvers between February and March of 1943 and two months of training in California commencing in September 1943. The division was transferred to Ft. Dix on 3 January 1944 and became part of the XIII Corps in the Third Army. The unit spent two months in England prior to D-Day conducting amphibious training.(3-26)

The 90th Division entered combat on 10 June 1944 with advance elements arriving on 6 June 1944. By the time of the river crossing operation, the division had seen continuous combat since its commitment except for two brief rest periods

from 28 July-1 August 1944 and from 17-27 September 1944. They experienced several difficult fights and the rest periods were used to further combat training, especially for the replacements. The division was not heavily engaged in combat during October with most combat activity occurring at the small unit level. The division used much of this activity to train new personnel with practical experience in patrolling and combat in cities. The ammo shortage dictated this lull in fighting so the division attempted to make the most of this slack time.(3-27)

The final preparations for this battle, included the attachment of the engineer units participating in the assault to the infantry regiments. These engineers conducted assault boat training with the infantry units. Since there was little experience within the division on the use of assault boats, this training, as well as the detailed planning of the individual boat loading, was absolutely critical for success.(3-28)

Finally, heavy casualties since the Normandy invasion had resulted in the division receiving many replacements who were relatively inexperienced. This was overcome by combat experienced leadership at all levels and adequate preparation time during October to train and integrate the new soldiers into their organizations. Strong leadership, extensive training as a division prior to commitment in France, considerable combat experience and adequate preparation time left the 90th Division

well prepared for this battle.

On the German side, they were organized to defend the Moselle riverline. The 416th Infantry and the 19th Volksgrenadier Divisions were defending in the 90th Division's zone of attack. Normal German defense doctrine called for the principles of elastic defense which they had developed and used with considerable effectiveness on the Russian front. This defense used sparsely manned outposts in the frontline trenches and strong mobile forces for counterattack to stop enemy penetrations. In the case of the 416th and 19th Divisions, no panzers or assault guns were allocated to them; so they were forced to defend the strongpoints and use light infantry as their counterattack forces. The Maginot Line fortresses of Koenigsmacher and Metrich were the main part of the German defense in this zone. While the forts faced the wrong way, the guns affected the 90th Division advance because they dominated the roads around the positions. The underground positions also provided protection for infantry, heavy machineguns and light artillery. The Germans possessed considerable field artillery, but much of it was obsolete. Extensive minefields were emplaced throughout the area which was common practice whenever the Germans were on the defense. The two German divisions were understrength and operated over extended frontages consequently, they were unable to man all portions of the forts. The German units were of low fighting quality with the 416th Division having no combat experience.

Prior to the battle, the 1st Army units, of which the 416th and the 19th were a part, concentrated on night training operations because without air superiority, daylight operations were disastrous. The German commanders apparently knew that an attack was coming in the Thionville area as part of an attack to pinch off Metz. Accordingly, German defensive preparations were oriented toward countering this operation.

During the battle, in accordance with German doctrine, elements of the 25th Panzer Grenadier Division were committed as a counterattack force. This was a well trained and effective division with considerable combat experience but they were committed too late to be effective. The reasons for their late arrival was due to command and control and logistics problems.(3-29)

With regard to the morale of the units involved in the battle, the morale of the 90th Division was excellent. The division was hurt in Normandy with high casualty rates. By the end of August, casualties were equal to 59 percent of the divisions task organization strength.(3-30) The monthly losses for June, July and August in the division were 2,421, 4,939 and 942 respectively. Replacements had kept the division at close to full strength.(3-31) Since August the division had acquitted itself well in battle, defeating some good German units. They were instrumental in the capture of many German prisoners during

the Falaise Gap operation. The division had regained its confidence by the time of the Moselle river crossing in November. The unit had received a 10 day rest during September; and October was their easiest month of combat since commitment.(3-32)

During the battle, weather had some impact on the morale because the flooding of the Moselle kept the troops from receiving dry clothes and socks for 4 days. Because of supply problems across the river, the units were short ammo and rations during the early operations. The unit also received heavy casualties with combat strength in the 6 committed battalions at 50 percent strength by the end of the 4th day. All of this had probable severe impact upon morale but the soldiers kept up their fighting spirit throughout the battle. Leadership was good and individual heroism was high with 2 soldiers winning the medal of honor during the action. The evacuation of wounded was continuous during the battle. Even though there was a shortage of boats to cross supplies and equipment, medics, doctors and engineers maintained a constant evacuation of litter cases to the near side of the river. These actions had a positive impact on morale and demonstrates the priorities that the leaders within the division placed upon taking care of the soldiers' needs.(3-33)

On the German side, the morale of the German units was poor to questionable at best. As previously noted the 416th Division

did not have any combat experience and many of the soldiers were older men. The 19th VG Division, like the 416th Division, came from Denmark to the Western Front. Unlike the 416th, the 19th Division had seen a great deal of fighting and had taken many losses. The fighting quality was low and at this time a defeatist attitude was beginning to affect many soldiers. This fact is illustrated by several groups of soldiers surrendering without much fighting. Also, several prisoners gave critical information about German operations. While this indicates that German discipline was deteriorating, the German Army had developed a strong fighting tradition from early in the war. There are indications that many soldiers still fought in the finest traditions of that Army. The German divisions in this sector stood up to the heavy American field artillery bombardment and inflicted many casualties on the 90th Division.

Turning to leadership within the two antagonists, The top leadership of the 90th Division had undergone turbulence since their commitment in France. Major General Van Fleet was the fourth commanding general in five months. The first two commanders were relieved and this coupled with the combat losses in Normandy, affected the unit's morale. In August, General McClain became the division commander and under his leadership, the fighting quality of the division was restored. General Van Fleet took command in October prior to the Moselle river crossing operation and he appears to have had the confidence of his division. The regimental commanders were experienced and

had commanded their regiments through most of the division's combat operations. During this operation the leadership of the regimental commanders was key because they had the flexibility to influence the action in their sectors.

On the opposite side, the top leadership of the German Army was experienced but they lacked the flexibility to determine the conduct of their defense. The Army Group commander was General Balck and the 1st Army commander was General Knobelsdorff. Hitler had given this Army Group an economy of force role and had stripped many assets from this part of the front. At the same time, he dictated to his commanders that they must hold the Metz sector to the last man. The German commanders did not have the flexibility to take advantage of the opportunity presented by the weather problems experienced during the 90th Division crossing. The availability of tank forces early in the battle may have defeated the 90th Division. Instead, it took the approval of Hitler to commit the 25th Panzer Grenadier Division. By the time this division was available, it was too late to affect the outcome of the battle.(3-34) A concluding note on German leadership is that there was a problem of unity of command in the German Army between Hitler and his generals which created serious problems on all fronts.

C. IMMEDIATE MILITARY OBJECTIVES

The 90th Division was the XX Corps main effort and was to drive a bridgehead across the Moselle River to encircle Metz from the north, interdicting the avenues of approach to Metz. The division was to linkup with the 5th Infantry Division, the southern pincers of the envelopment. Once the bridgehead was secure, the 90th Division was to pass the 10th Armored Division through to continue the attack eastward. The 90th Division selected the key terrain in the northern part of the sector as one intermediate objective. This objective cutoff counterattack routes into the position and provided defensible terrain for the Corps northern flank. The second intermediate objective was the reduction of the fortresses of Koenigsmacher and Metrich. This was immediately important because it eliminated direct fire on the bridge sites and was of future importance because it secured the Corps line of communications through this sector. The selection of these intermediate objectives supported the Corps plan to envelop Metz as quickly as possible. From a tactical perspective, the bridgehead was not secure without the seizure of these objectives. Further, the taking of these objectives supported 3d Army strategic goals because it allowed the passing of the 10th Armored Division to continue the attack eastward.

The German 1st Army mission was to hold the fortress of Metz, defend their sector without siphoning resources from elsewhere in German Western defenses and to buy time for the upcoming Ardennes offensive. This was consistent with the German strategic goals.

CHAPTER 4--THE FIGHT

A. DISPOSITION OF FORCES AND OPENING MOVES

The general scheme for the attack was the 358th, on the right, would try for a crossing near Cattenom, and once on the east bank would launch a direct assault, with a minimum of force, to take Fort Koenigsmacker. At the same time, the 358th was to strike to secure a lodgement on the main ridge line extending southeast of the Fort. The 359th Infantry, using the Malling crossing site, was to carry the attack on the left wing of the division. Its objective, in the first phase of the maneuver was the high ground between the Altenberg and the village of Oudrenne. The reserve regiment, the 357th Infantry was scheduled to cross behind either one of the assault regiments at the earliest moment and thrust down the along the Maginot line through the gap left by the 359th and 358th. Since the large town of Koenigsmacker lay between the axes of advance for the two assault regiments, plans were made to neutralize the town and hinderland by artillery fire until such time as the 357th could arrive east of the river and seize Koenigsmacker.

The final assembly area for the 90th Division was the Foret de Cattenom. This forest offered ample cover and lay close to the Moselle. But it was on a forward slope under

observation from the German side of the river and therefore could only be entered during the hours of darkness. The 3d Cavalry Group extended its patrolling to include this sector. The two nights preceding the attack the 90th Division Artillery displaced to positions on the rear slopes behind the forest. On the evenings of 7-8 November the Infantry, moving by truck, through the rain and along slippery and tortuous roads were taking their place in the assembly area. When 8 November dawned, the entire 90th Division, 6 battalions of supporting artillery, 2 battalions of tank destroyers, 1 battalion of engineers and 3 bridge trains, were in position inside the forest and behind the hills. (4-1)

During the early evening the 3d Cavalry Group stepped up its harassing fire, which had been a feature of previous nights, in order to mask activity on the American bank. Trucks moved bridging equipment down the roads leading to the demolished Moselle bridges. Tanks, assault guns, mortars and machine guns were placed in position close to the water's edge so as to give direct support to the assault troops. A little before midnight the assault battalions of the 358th and the 359th began the carry to bring their boats to the river. Meanwhile the 95th Division had begun the demonstration at the Uckange crossing site, and finally at 0330, the first attack waves of the 90th Division began moving across the river. Only the left battalion of the two assault regiments reached the river in time to shove off as planned, the 1st Battalion, 359th, making the crossing at the Malling site, and the 3d

Battalion, 358th, leading off at the Cattenom crossing. (4-2)

Although the flood waters of the Moselle increased the difficulties attendant on the crossing, they also acted to lessen the dangers on the enemy bank. The extensive mine plots prepared weeks before by the Germans were flooded over and the American assault craft passed them with impunity. The fox holes and rifle pits dug along the east bank were water filled and untenanted.

The scattered outposts of the German 416th Infantry Division in this sector, caught completely off guard, offered little opposition to the initial assault waves and were cut down with grenades and Tommy guns. By 0500, the leading battalions were on the east bank and 3 hours later the troops of the 1st Battalion, 358th, and the 2d Battalion, 359th, were across in their respective regimental bridgeheads. These two right wing battalions were brought under a hot fire by the enemy, who had recovered from their initial surprise, but losses were slight.

On the east bank the first phase of the attack was executed swiftly and according to plan in the midst of a drizzling rain. In the 359th zone, the 1st Battalion was east of Malling when day broke and had cut the main highway to Thionville and Metz in two places. The reserve company entered Malling before the sleeping German garrison could man their positions and in a matter of minutes seized all of the town

but two fortified houses, which fell later in the morning when a section of 57-mm AT guns were ferried across and laid on these buildings. By noon 133 prisoners had been rounded up in Malling. (4-3)

The reserve battalion the 3d, followed hard in the wake of the assault battalions and marched almost without opposition to the crossroads village of Kerling, where it linked up with the 1st battalion on the north and occupied a section of the ridge line which had been designated as the 359th objective. On the high ground north of Kerling, the Germans elected to make a stand, but the lead company of the 3d Battalion, attacking straight toward the flashing muzzles of a battery of 4 German AT guns, took the position. (4-4)

Across the river from Cattenom in the zone of the 358th attack, the leading platoons of the 3d Battalion also moved speedily forward, slipping past Fort Koenigsmacker before daylight and starting the advance toward the high ground between Kuntzig and Inglange which marked the initial objective for the right wing of the 90th Division. The 1st Battalion, following the 3d, threw a company into Basse Ham before the enemy could react and dispatched companies A and B to make the coup de main at Fort Koenigsmacker on whose success the 358th maneuver turned. Before day broke, the two companies were disposed in the woods in front of the hill on which the fort stood. (4-5)

The 416th Division and the 19th VG Division were the main German forces opposing the Americans. The 416th Division was not capable of offensive actions and was thus limited to defensive formations only. The division was organized into three Regiments and had a combined strength of about 8,500 men. The average age of the men in the division was 35 years old the majority had not seen any combat. Internal support within the division was minimal and especially in artillery was limited to outdated fortress guns and captured 122mm Russian field guns. The 19th VG Division was also rated as a defensive unit but was in somewhat better shape than the 416th Division. Both Divisions had comparable strength figures but the 19th VG Division had more combat hardened soldiers as the unit had seen combat before. Additionally, the 19th VG Division had a much better artillery posture by having more and newer guns. In October the field artillery battalions from both Divisions were grouped together along the division boundaries to provide massed fire against an attack in the Thionville area. The German commander prepared to commit the untrained infantry as soon as possible against any American attack. However it was thought, by the Germans, that the Americans would not attack in this area and especially in the area of the 416th Division. Thus the Division had an enormous front so much so that on the day of the attack all the available battalions were in line and one regiment was being held in Corps reserve. The 19th VG Division had two regiments in line. The Germans had designated reserve units but only the

25 PG Division was to participate in his part of the battle.

(4-6)

The initial American attack came as a surprise to the Germans. They initially felt that due to the small forces involved that the 90th Division was conducting a feint or economy of force action and that the main American attack was in the north. The attack split the seam of the 416th Division and the 19th VG Division and contributed to an initial confusion by the Germans and their inability to mount an immediate defensive action. The dispersion of the 416th Division assisted the Americans. "At Malling, where the 359th Infantry made its crossing, there was only one and a half companies of infantry. The nearest German support not already engaged was one company of the 713th Regiment about five miles to the rear." (4-7) Although, in most cases the German reaction to the attack was slow, additional reserves were released from Corps to strengthen the southern flank but these units did not arrive until late in the 9th. Four Infantry battalions from the 25th PG Division were released to assist in the defense against the 90th Division but due to the lack of fuel and transportation these units did not arrive in the battle area until the evening of the 11-12 of November. (4-8)

The 59th Regiment, 19th VG Division was the only unit available for immediate use as a counterattack force. The unit engaged the 3rd Battalion (-), 359th Infantry at Kerling. Other than scattered resistance from small units, company and

smaller, the initial river crossing was virtually unopposed for the first few hours. (4-9)

B. MAJOR PHASES OF THE BATTLE

The major phases of this battle can be divided into three areas. The first phase of the battle was the initial assault across the Moselle River. The second phase of the battle was the continuation of the attack and the consolidation of the bridgehead. The breakout of the Division toward Metz and the passage of the 10th Armored Division constituted Phase III of this operation.

INITIAL ASSAULT

The initial assault across the river which commenced at 0330 hours on 9 November 1944 allowed the 1st and 2nd Battalions of the 359th and the 1st and 3rd Battalions of the 358th to cross the river by 0500 hours.

The action and movement was quickly slowed from this point on as the Moselle River was rising and overflowing its banks with extreme rapidity. (4-10) From its normal width of 350 feet it had expanded to 400 then 600 then 800 yards. As the river spread out from the banks loading and unloading were first carried out in knee, then in waist deep water. The

increasing current tossed the heavily laden boats like match boxes. Engineer crews returning for additional loads discovered their boats unmanageable and were swept downstream. It became necessary to double boat crews and halve the number of returning boats with each successive trip. (4-11)

However, the initial battalions which crossed the river had caught the enemy completely by surprise and swiftly executed the first phase of the attack according to plan.

"In the 359th Infantry zone the assault battalion made excellent progress. The 1st Battalion had pushed due east and north from Hunting pushing the enemy before them until they were stopped just short of the high ground which was the regimental objective. The 2nd Battalion, after capturing Petite Hetlange and Meltrich continued to the Southeast until halted some 1500 meters from Oudrenne by extensive mine fields. The 3rd Battalion (-) moved into the center of the regimental zone seizing Kerling and the high ground to the north thereof where contact was made with the 1st Battalion". (4-12)

"In the 358th Infantry zone, the leading platoons of the 3rd Battalion moved speedily forward slipping past Fort Koenigsmacker before daylight and started their advance toward the high ground between Kuntzig and Inglange which was the initial Regimental objective". (4-13)

The 1st Battalion following the 3rd Battalion threw a company into Basse Ham before the enemy could react and sent their two remaining companies to assault Fort Koenigsmacker. This assault began at 0715 hours and it caught the enemy by surprise. Both companies were in the German trenches inside the wire before the enemy could get off more than a few rifle shots. Most of the German troops, however, were protected below the surface in a series of tunnels and underground rooms which were entered by the way of steel and concrete OP's and sally ports at ground level. The fort garrisoned by a battalion of the 74th Regt, 19th VG Div which erupted from their tunnels with small scale counterattacks. The battalion spent the rest of the day systematically reducing underground rooms and tunnels with the help of the 315th Engineers. (4-14)

"Meanwhile the 2nd Battalion, 358th fought the river and crossed it, assembling west of the town of Koenigsmacker preparatory to its commitment the following morning". (4-15)

The 357th Infantry Regiment (reserve) crossed the river during the day at both the Malling and Cattenom crossing sites with the 3rd Battalion crossing at the heels of the 2nd Battalion taking three hours to negotiate the raging river all while under bitter fire from heavy caliber German mortars. Power launches were used to cross the 2nd Battalion. (4-16)

By midnight 9 November, some 20 hours after the initiation of the assault the Division had eight battalions of

Infantry on the enemy bank and a few light AT guns. It had achieved complete tactical surprise and by dawn had breached the enemy's first line of defense. Without benefit of armored support it had penetrated to a depth of 3 KM's overrunning seven towns and capturing 200 prisoners. It had made the first penetration into a Metz type fort and it had secured the planned initial bridgehead. (4-17)

This ended the first phase of the battle. In retrospect, although the rising and raging Moselle River had made the river crossing extremely difficult for the initial assaulting forces, the river actually helped the unit on the enemy side as it forced the enemy to withdraw from their observation posts on the far riverbank and the swollen river actually covered over minefields and wire entanglements which would have had to have been negotiated if the water had not covered them.

As can also be seen, this phase of the operation was carried out as a complete surprise so it can be said that deception was used. Also, since the enemy was caught off guard there was very little reaction on his part other than some small scale counterattacks inside Fort Koenigsmacker itself. The enemy withdrew to its second defensive line to regroup. There was no need for the commitment of the reserve regiment and the interesting fact is that this phase of the operation was carried out without the use of much combat support and combat service support. Except for the Engineer units which

were attached to each Regiment and the artillery which was firing from the west bank of the Moselle the infantry battalions were by themselves with only a few light AT weapons. The rising river prevented Armor and AT units to cross to the enemy side.

It can be seen that overall, this phase of the operation was a success from every standpoint. Tactics were consistent with the doctrine of the time and it seemed that the Division planning and the guidance and leadership displayed by its officers were highly commendable. However, the number of prisoners captured had been small - about 200 - and this meant that the main enemy positions and defenses had yet to be encountered. (4-18)

CONSOLIDATION OF THE BRIDGEHEAD

The second phase of the operation which consists of the continuation of the attack and the consolidation of the bridgehead is the most complex and lengthy phase of the operation. This phase commenced on 10 November and lasts until dawn on 14 November. This phase of the operation is hampered mainly by the Moselle River which steadily rose because of the continued rain. The inundated area was now 1 1/2 miles wide with water standing in the streets of both Cattenom and Gauisse-Malling. (4-19) This, of course, restricted and hampered the work on the two bridging sites and this coupled with continued enemy shell fire did not allow for complete

bridging until 14 November. This meant that the badly needed combat support and combat service support could not cross the river to assist the infantry battalions that were already across and operating on the enemy bank. This was perhaps the determining factor as to why this phase of the operation was protracted over such a long period.

10 NOVEMBER

During 10 November there were some isolated counterattacks in the 359th Infantry Regiment zone (north) but these were effectively repulsed and contained.

The 357th Infantry, in the center, which had occupied the town of Koenigsmacker without a fight the night before set out to attack the Meltnich group of fortifications about a mile southeast of Koenigsmacker which constituted the initial objective for the Regiment. The lead battalion (3rd) assaulted up the western slopes of the heights on which Meltnich fortifications were located and by 0800 had overrun the west half of the Meltnich group. The 2nd Battalion assaulted the eastern half of the forts but were repelled and forced by day's end to regroup around the other side of the heights joining 3rd Battalion, the two forming up to face down the Maginot Line ridge. (4-20)

"On the right of the Division zone, the advance of the

358th Infantry was bitterly contested by the German 74th Regt. The 1st battalion continued to blast away at the ferro-concrete works of Fort Koenigsmacker, but they failed to silence the enemy's fortress artillery and heavy machine guns on the Fort. The 3rd Battalion (-) succeeded in bypassing the Fort and dug in on the Bois de Elzange ridge, the regimental objective. The 2nd Battalion tried to swing around the south of the Fort and join the 3rd Battalion on the ridge but they were badly cut up from flanking fire from the Fort and their advance was brought to a halt". (4-21)

"At days end the Division situation was critical. The first major German counterattack was expected at any time. The eight infantry battalions were still unsupported by armor or TD's and covering fire depended on the artillery batteries sited on the west bank of the river, whose gunners working in mud to their knees fired around continuously". (4-22)

"The Infantry, moreover, who had fought constantly for two days and nights were rain drenched, numbed with cold and utterly fatigued; they had no blankets, were much reduced on rations and barely sufficient ammunition. Battle casualties had been severe and the toll from exposure and trench foot was beginning to mount. The enemy, with his observation on the bridging sites, together with the worst river conditions in history had so far nullified the bridging efforts, despite the work of the Engineers. On completion of a bridge for armor, for anti-tank guns, for supply, for evacuation - lay the key

to ultimate success". (4-23)

Furthermore, "the supply routes back to the river, which were to supply the infantry battalions, were still under fire. Lacking their own vehicles, supply parties were forced to carry what they could in abandoned baby carriages and rickety farm wagons. Despite all of these conditions some resupply reached the troops and a few 57MM AT guns were ferried over to reinforce the infantry". (4-24)

11 NOVEMBER

"At 0200 hours on the morning of the 11th the Malling bridge was completed but water, to a depth of 58 inches, on the causeway approach made the bridge unuseable to vehicle traffic". (4-25)

At dawn, the 2nd and 3rd Battalions of the 357th Regiment (center) attacking abreast drove forward down the line of the Maginot Forts. They made excellent progress by-passing and leaving for follow on forces those emplacements which could not quickly be reduced. (4-26)

"By the evening of 11 November, the leading infantry of the 357th were in possession of the high ground northwest of Brestroff-la-Petite forming a salient well in advance of the regiments on the flanks. This created a supply problem for this regiment as the roads back to the river bank were still

not secure which made the night carrying parties stumble across the traverse draws and gullies which chopped up the 4000 yard supply route.

On the north wing of the Division, the 1st Battalion 359th Infantry Regiment was briefly thrown off stride by local counterattacks during the morning hours - probably made by troops of the reserve regiment of the German 19th VG Div. Battalion AT guns disabled two of the enemy's three assault guns and the attack was eventually driven back so that by 0900 the 1st Battalion had gained back its lost ground.

The 3rd Battalion which had just occupied the high ground directly north of Kerling was also counterattacked by German assault guns and infantry. The battalion failed to stop the assault guns. As a last desperate measure, the American guns laying on indirect fire from across the river were told to continue their fire even though the Germans were already on the 3rd Battalion lines and casualties would be suffered by the Americans from their own shells. Two company commanders were killed as they rallied their troops to make a stand, but their example gave heart to their men and the Germans were finally repelled.

By mid-morning, the 359th attack was in full momentum all along its front. The ridges ahead were all taken after a stiff fight, Kerling was outposted, but Oudrenne remained in German hands. The crossroads southeast of Rettel were seized and

blocked, thus cutting the main highway entering the regimental zone from the north. This stabilized the left flank of the Division along a relatively defensible line". (4-27)

Over on the south flank of the Division, the 2nd Battalion, 358th Infantry under cover of darkness had slipped past the machine guns and observation posts which had denied its advance the previous day and positioned itself on the wooded ridge on the right of the 3rd Battalion.

At 0800 the 3rd Battalion was counterattacked by 150 Germans and three assault guns but the battalion had learned of the counterattack from captured Germans prisoners and they were waiting in ambush where they annihilated the enemy. Thereafter, both 2nd and 3rd Battalions moved ahead although their advance slowed by strong enemy resistance and concentrated mortar fire but by late afternoon 3rd Battalion took Hill 252 and 2nd Battalion, to its right rear, positioned itself for the assault on Valmestroff the following morning. (4-28)

"The 1st Battalion succeeded in securing the surrender of Fort Koenigsmacker. The Germans had lost at least 301 captured or killed in defending the fort while the losses of the 1st Battalion numbered 111 killed, wounded and missing.

At the end of 11 November, the 90th Division was in a far more advantageous position than 24 hours earlier. The left

flank of the Division, Corp and Army was finally secure. The first German major line of resistance had been broken at Forts' Metrich and Koenigsmacker and it was cracking at spots along the ridge lines in sectors of the 357th and 358th. Over 500 prisoners had been taken and the area of penetration had nearly doubled. Finally the flooded Moselle had crested and was beginning to recede.

This day saw heavy infantry fighting and the infantry had succeeded in beating back small company size counterattacks without the help of armor and AT weapons as these were still on the other side of the river. The enemy fight, thus far, had been carried by the German 416th Inf Div and the 19th VG Div. But a strong regimental counterattack had not yet materialized.

Late in the day tractor snorkeling trucks loaded with jeeps and supplies splashed through the flooded causeways over the Malling bridge. Ferries, now more manageable, crossed vehicles and AT guns". (4-29)

12 NOVEMBER

At 0300 hours a German PG task force of the 25PZ Gren Div of regimental strength, with artillery and tank support, launched a counterattack against the entire line of the 359th Infantry. The initial German assault drove the 3rd Battalion outposts out of the Kerling and forced the battalion back to

the high ground northwest of the village where it reformed on the right of the 1st Battalion. Shortly before 0600 the main attack developed, one enemy force thrusting along the Kerling-Petite-Hetlange road, another striking the junction of the 1st and 3rd Battalions south of Hunting. The fire of all 20 artillery battalions available to the division were brought into play from across the river; a deep draw in front of the 1st Battalion, the town of Kerling, the Kerling-Petite-Hetlange road and all other approaches were rapidly and heavily hit and hit again. While the 1st and 3rd Battalions stabilized their positions the remainder of the 2nd Battalion, on the Regimental right, assembled for a counterattack on the flank of the enemy penetration. (4-30)

"Back at the river, the receding waters permitted the movement of tank destroyers. The first two, earmarked for the 357th Infantry, crossed safely and were diverted to the 359th Infantry. Thus reinforced, the 359th Infantry fought with even greater fury, stopping the Germans and forcing them back. As the Germans retreated toward Kerling the counterattack of the 2nd Battalion struck them squarely on the flank, cutting them to pieces and turning the initially ordered withdrawal into rout". (4-31)

"In sum, the counterattack on which the German command had counted so heavily cost the enemy over 400 dead, about 150 prisoners, 4 tanks, and 5 assault guns.

By late afternoon, the 359th had restored its lines and was ready to attack. The 2nd Battalion led off along the road to Kerling, from which the village the enemy attacks had been formed, but it slowed due by mines and finally forced to halt short of the village as darkness fell.

Of particular note, the mortar and machine gun crews of G Company, 2nd Battalion distinguished themselves in this action with SGT Forrest E. Everhart winning the Congressional Medal of Honor for his actions during this German counterattack".

(4-32)

In the 357th Infantry zone, 2nd and 3rd Battalions attacked at daylight after beating off locally executed counterattacks. 1st Battalion which had been released from its Division reserve status and which had crossed the river with great difficulty the preceding day mopped up the by-passed pillboxes and forts in the Koenigsmacker woods and the Billing Group. 3rd Battalion overran Briestroff-La-Petite and moved forward until stopped by a fortified belt half way up the slopes south of that town. After heavy fighting the Battalion was able to continue its advance. 2nd Battalion, on the right, was able to by pass the above resistance and secured the West half of the high ground dominating the town of Inglange from the east. At the close of the day, 3rd Battalion protecting its left flank because of the situation in the 359th zone had advanced its right company abreast of the 2nd Battalion.

(4-33)

"The 358th Infantry likewise found the Germans on their front determined to stand and hold. The 1st Battalion was placed in reserve covering the right flank of the Division and resting after the hard fought battle of Fort Koenigsmacker. 2nd and 3rd Battalions, in a coordinated attack drove ahead in bitter fighting to secure by mid afternoon the line Elzange-Valmestoff. Advancing south from Valmestoff, 2nd Battalion developed a fortified area to its right front, sustaining heavy casualties". (4-34)

"During the later part of the day a heavy ferry was successfully put into operation at the Malling site by midnight two platoons of tank destroyers and two platoons of tanks had crossed the river along with an equivalent number of command and litter 1/4 ton trucks. Bridge construction at the two crossing sites was renewed as the river continued to recede.

At the close of the 4th day the Division had made additional ground gains and had effectively stopped a regimental size German counterattack. However, there still were no dry clothes or blankets for the soldiers to keep warm with and in six of the nine battalions, the rifle strength was only 50%. Furthermore, the events of 12 November gave no indication that the German will to resist had weakened". (4-35)

13 NOVEMBER

"By 13 November, the advance of the 357th Infantry had carried the Regiment to the limit of its artillery support. The regiment paused and cleared out the remaining knots of Germans in its rear with explosive charges and flame throwers, while the regiments on either flank moved up abreast. The 359th Infantry Regiment reoccupied Kerling without a fight. But when the 2nd Battalion attacked late in the afternoon to link up with the 357th outposts near Oudrenne, the leading company hit into a large minefield. After further attempts to determine the limits of the mined area the infantry was forced to attack straight through the mines taking their losses. Later, over 12,000 plastic and wooden box-mines were taken from this one minefield.

The 358th Infantry also was slowed by mines as it continued along the ridge chain, but the enemy infantry gave little opposition and apparently was returning to a new line of defense.

The bridge at the Cattenom site was finally completed during the morning by engineer parties building from both sides of the river under a very elaborate smoke screen laid down by the smoke generators, 4.2 chemical mortars and two battalions of field guns, which did not break once during the entire day". (4-36)

"At 1740 hours the first vehicle crossed the Cattenom bridge and its crossing marked the final phase of the consolidation of the bridgehead. Behind the organic transportation of the 357th and 358th Infantry rolled the 90th Division Reconnaissance troops and the light tanks which swung into action on the division's right flank with the mission of establishing contact with the secondary bridgehead forced by the 95th Infantry Division at Thionville. One gun from each of the light artillery battalions was crossed immediately before dark to register in forward position areas so that the remainder of the battalions might be crossed at night without impairment of artillery support. Throughout the night traffic rolled across the bridge in a steady stream.

During the night, orders were received that the 10th Armored Division would cross Thionville bridge and upon its completion pass through the 90th Division rear and assemble on the left of the 90th Division zone preparatory to the initiation of its attack. Simultaneously one squadron of the 3rd Cavalry Group would cross behind the division on the Cattenom bridge to take over the 90th Division's assigned mission". (4-37)

This ends the second phase of this battle. This phase was a long and drawn out affair, executed under some of the most trying and adverse conditions encountered by the men of the 90th Infantry Division. The extreme limiting factor in this

phase of the battle was the inability of the division to cross Armor, AT weapons, combat support and combat service support which could have been used as combat multipliers to perhaps shorten the length of this battle. The battle was a straight infantry battle with very little combat support available. Despite all of these factors the Division succeeded in repelling numerous counterattacks to include a regimental size counterattack and this was done without Armor and tank destroyers to a large extent. This phase of the battle taxed the morale of the battalions and the successful conduct of this phase of the operation is a tribute to the overall leadership abilities of the officers and men of the division.

THE BREAKOUT TOWARD METZ

The third phase of the operation consists of the breakout of the Division toward Metz and the passage of the 10th Armored Division

14 NOVEMBER

By dawn all regimental transportation, all light artillery battalions, the tank destroyers and the engineer battalion had cleared the bridge. Delay in the completion of the Thionville bridge postponed for the time being any interference between the 90th Division debouching from the bridge site and the 10th Armored moving east from Thionville.

At 0800 2nd and 3rd Battalions, 359th Infantry advanced to maintain pressure against the enemy. 3rd Battalion quickly captured Frenching and mopped up Le Sillere woods. F Company, still slowed by mines, cut the Kerling-Lemestroff road south of the Le Sillere woods. G Company, also picking its way through minefields, occupied Oudrenne in the middle of the afternoon and made contact with the 357th Infantry.

357th Infantry completed mop up operations in its rear area and maintained strong combat patrols to its front to develop enemy dispositions preparatory to renewal of the attack.

3rd Battalion, 358th Infantry advanced against continuous resistance and secured a firm foot astride the Inglange-Distroff road. Hesitating to commit its units in a divergent effort to capture Inglange, the battalion commander probed its defenses. The town had been converted into a strongpoint with armor and anti-tank guns. Plans were accordingly drafted for a full scale assault upon it the following morning. 2nd Battalion advanced 2 KM and in bitter fighting captured Distroff. Prior to the attack artillery observers from 2nd Battalion fired on an enemy mechanized column of 100 vehicles moving from Distroff to Stuckange. The effect greatly weakened the blow that force struck against the bridgehead force at Stuckange the following morning. Meanwhile the 1st Battalion, its flank protection mission taken over by the Reconnaissance Troop, assembled in Valmestroff as a

regimental reserve.

90th Reconnaissance Troop, with attached light tank company, bridged the gap between the 95th Division at Thionville and the 90th Division, providing a protected route for the passage of the 10th Armored Division. Other elements of that force captured Kuntzig and linked up with the 2nd Battalion, 358th Infantry.

By 1500 almost all vehicles had crossed the river. At 1530, 3rd Cavalry Squadron initiated movement. Coincidental with the cavalry crossing, the first combat command of the 10th Division passed through Thionville on the east bank of the Moselle and rolled to its assembly area in the vicinity of Kerling.

Under cover of darkness the 3rd Cavalry Squadron relieved the 1st Battalion, 359th Infantry in place and that unit latter assembled at Hunting. 2nd and 3rd Battalions remained in position outposting the assembly area of the armor.

15 NOVEMBER

At dawn, 15 November, the most violent counterattack of the campaign struck the 2nd Battalion, 358th Infantry positioned at Distroff. Preceded by artillery fire, two battalions of the 25th Panzer Division drove abreast into the town from the south, while a third battalion enveloped from

the east. The left (west) battalion never reached the town in strength due to the effect of the 90th Division artillery. But the other two battalions overran the outposts and split the defending garrison. The regimental reserve was alerted and placed in motion while the 3rd Battalion postponed its attack against Inglange to await further developments. In the town the deliberate defensive fighting of the 2nd Battalion continued. After four hours of savage fighting the attackers gradually withdrew. Behind them they left over 150 dead and wounded, 40 prisoners and seven destroyed tanks and vehicles. The artillery maintained heavy fire on the withdrawing Germans and completely disorganized them. When it had become apparent the 2nd Battalion could handle the situation, the 1st Battalion was diverted to the southeast and assembled in the vicinity of the 3rd Battalion, taking over the left regimental zone of action the following day.

2nd and 3rd Battalions, 357th Infantry continued their attack at 0645. Fighting against weak resistance they reached the forward slopes overlooking the valley road which ran east to Budling. At this point they came under very heavy artillery fire coming from the Hackenberg fortifications to the left front. Tank destroyers as well as indirect firing 8" and 240mm howitzers were ineffective. With the fort guns commanding the entire open valley in front of the next objective further advance was considered impractical. Position reconnaissance was initiated for the self propelled 155mm guns available to the Division. In the meantime 1st Battalion was staged forward

to take over the right half of the regimental zone. 2nd Battalion was scheduled to side slip to the left relieving the 3rd Battalion while that unit veered to the southeast to mop up the Hackenberg fortifications.

16 NOVEMBER

10th Armored Division passed through the 3rd Battalion, 359th Infantry in the middle of the morning. The battalion assembled at Kerling while the 2nd Battalion remained in position awaiting such advance of the 10th Armored Division as would cover it.

Just prior to dawn 3rd Battalion, 358th Infantry assaulted Inglange. By 1000 the battalion was in complete possession of this objective. Its mission accomplished, it reverted to regimental reserve. 1st Battalion attacked along the high ground south from the 3rd Battalion's position, mopped up Le Jungwald Woods and carried Hill 226 southwest of Buding against strong opposition. 2nd Battalion patrolled toward Metzervisse whose north side was heavily defended. Therefore it swung southeast onto the high ground and attacked the town from northeast under the cover of massed artillery. By dark the battalion had cleared out the town.

1st Battalion extended to the southwest and made contact with the 2nd Battalion east from the town.

In the 357th Infantry zone the self propelled guns and the 8" howitzers methodically started with the destruction of the Hackenberg fortifications. They effectively silenced the enemy fires. 1st and 2nd Battalions captured the steep wooded ridge running from Buding to Veckring and secured Buding and Helling.

On the right flank 90th Reconnaissance Troop continued its mission. During the morning it captured Stuckange and, finding its progress eastward blocked by minefields, swung south along the division boundary. It assaulted Reinage and began to clear the mined approaches. On the opposite flank of the division, the 359th Infantry, covered by the 10th Armored Division, assembled in Oudrenne as Division reserve.

17 NOVEMBER

Attacking at 0900, 1st Battalion 358th Infantry took Le Stolbusch Woods against light infantry but under heavy mortar and artillery fire. After the consolidation at the objective the 2nd Battalion was staged forward into the western half while the 3rd Battalion displaced to Metzervisse. At 1400 1st and 2nd Battalions attacked the town and secured the objective. 1st Battalion pushed forward and secured the high ground east and south of the town and cut the road from Hombrough-Budange.

1st and 2nd Battalions, 357th Infantry attacking against

moderate resistance had secured, by noon, Elzing and the ridge line to the east. 3rd Battalion moved through Budling and cleaned out the Hackenberg fortifications. The walls and turrets were demolished by the direct fire of the 155mm guns. As the 1st Battalion advanced rapidly onto the high ground in the Bois Du D' Hunolstein overlooking Hombourg-Budance, 2nd Battalion uncovered an enemy strong point in the town of Klang. A gap in depth between battalions thus developing, 3rd Battalion was thrown into it to consolidate the left half of the regimental objective pinching out the 2nd Battalion. When tanks arrived from Kedance to support the assault of the town, the enemy fled toward Kemplich and was annihilated by the concentrated fire of F Company and the 3rd Battalion reserve.

(4-38)

The events of 17 November both north and south of Metz forced the German Army to give orders for the 416th Infantry Division and the 19th VG Division to withdraw from their sectors. (4-39)

18 NOVEMBER

"On 18 November the American forces pursued the retreating German columns. The 359th Infantry relieved the 358th Infantry as soon as it reached the town of Luttange. Specific objectives were no longer assigned. The general mission, however, remained the same: to close the gap east of Metz and link up with the 5th Infantry Division which was

advancing from the south.

At the end of this first day of pursuit, the 359th Infantry had troops across the Nied River at Conde-Norten, 12 miles east of Metz, and the 90th Reconnaissance Troop held Avancy, locking one of the main escape routes from Metz. Through the night, the Americans fired on the exit roads with every weapon they could bring to bear. The Cavalry alone counted 30 enemy vehicles destroyed and took over 500 prisoners". (4-40)

19 NOVEMBER

"At daybreak 2nd Battalion, 359th Infantry moved southwest to Les Etangs and capturing the town in a surprize attack. Because Les Etangs blocked any escape route, German transportation columns were trapped and destroyed by the combined efforts of the artillery and fighter bombers.

The 357th Infantry advanced to the Nied River, capturing Roupeldange, Guinkirchen and Hinckange before the division was ordered to halt on the line of the Nied.

At 1100, 90th Reconnaissance Troop advanced south across the Division boundary and made contact with the 735th Tank Battalion supporting the 5th Division, thus completing the encirclement of Metz. This action completed the 90th Divisions role in the Metz operation". (4-41)

C. KEY EVENTS

The attack of the 90th Infantry Division to cross the Moselle River and envelop the city of Metz in November, 1944, undoubtedly consists of numerous key events, decisions and actions by commanders ranging from Third Army commander Patton to the heroic infantry and engineer small unit leaders who fought the innumerable small battles that led to such an overwhelming success. Several, but certainly not all, of these events have been recorded for history. The key events reported here represent those actions at both the operational and tactical levels of war which seem to have had the most effect on the eventual outcome of the battle.

The Decision

It is widely reported that Patton was extremely distraught about the change of strategy that caused his Third Army to come to a virtual standstill during the period September to November, 1944. Lacking priority of supplies, his Army was forced to conduct only local actions in the Lorraine area west of the Moselle River. After Eisenhower's 18 October conference with his commanders, it appeared that the priority would remain with the First Army in the north and that Patton's force would again advance when logistics permitted. (4-42) In discussion with Bradley later Patton was

able to get permission to conduct limited objective attacks toward the West Wall commencing on 10 November. (4-43) Delays in the north caused Bradley to ask Patton on 2 November, if Third Army could attack first. Bradley and Patton agreed that the Third Army would advance as soon as weather was favorable, and whatever the weather, no later than 8 November.

Though the weather had been atrocious throughout the period that Third Army had been in Lorraine, the weather the last few days before the attack was worse. Rain had not only severely limited mobility and use of airpower but was causing the Moselle River to flood. On the evening before the initiation of the Third Army's attack by XII Corps, the corps commander Eddy and one of his division commanders came to Patton and stated that they did not think they could attack the next morning because of the effects of the weather. Patton asked him to name his successor because the attack was not to be postponed. Eddy departed and initiated the attack as planned. (4-44)

While Patton was eager to resume the offensive he was certainly no fool. He was not going to commit his two corps force, half of which was made up of new and untried divisions fresh from the states, to an operation that was doomed to failure. Despite his "damn-the-torpedo" exterior, he was a shrewd tactician and leader and had shown himself capable of calling off a "no win" operation when he had ordered the pull back from Fort Driant only a month before. The evidence seems

to say that Patton Knew the enemy, knew he had a good plan, knew that he had (however temporarily) the required resources to attack, and had determined that the combined effects of the weather and the deception plan would significantly surprise the Germans. He sensed that the morale, fighting edge, and preparedness of his soldiers and units waiting in the rain for a few more days to attack would grossly diminish. The weather and ground conditions would sap the strength of his units and cause increasing soldier casualties with or without the attack. His refusal to delay the attack was a tough, but wise, decision at the operational level.

Surprise

The overwhelming surprise achieved in the crossing of the 90th Division was perhaps the most key factor in the success of the operation and was the result of a combination of factors. To truly gain surprise an army must present the same false picture to all of the enemy's intelligence collection means. The false picture must also be congruent with the enemy's understanding of the opposing forces capabilities and intentions. This is indeed the situation that was created by the American elements preparing to attack across the Moselle, to reduce the German fortress Metz and to advance to the West Wall.

Surprise was attained in part because the Third Army had been held up since September and had been bled of many of its

resources. It was at the end of a long and difficult supply line and did not have priority. In order to relieve some of the resupply problem one of the corps assigned to Patton's Third Army had been chopped to Seventh Army so that it could be resupplied from the south, up the Loire from Marseille.

The enemy occupied the best terrain, the high ground along the Moselle, and occupied all the forts that commanded the area and had been incorporated into the Maginot Line defenses by the French. As previously mentioned, the downpour, the mud, and the swollen river certainly did not favor a river crossing. With the advantages of terrain and weather on their side, the Germans were not expecting an Army attack across a broad front on 8 November.

XX Corps contributed to the deception by working out a detailed, comprehensive plan for the capture of Metz which took into full account the need for surprise. During the period 31 October through 2 November, the newly arrived 95th Infantry Division quietly replaced the veteran 90th Infantry Division on the forward line. The 90th moved quietly into an assembly area for training and preparation for the river crossing.(4-45)

The XX Corps plan also had the 3rd Cavalry Group conducted vigorous patrolling of the riverline to deny the enemy knowledge of the impending operation. (4-46) All reconnaissance made by the leaders of the 90th Division were

made in vehicles of the 3rd Cavalry Group. The 3rd Cavalry also became suspicious of the civilians in the town of Cattenom, a planned assault crossing site, and evacuated them. During the nights immediately preceding the assault the 3rd Cavalry also employed a greater level of harassing fire to cover the noise of the assault units moving into position.

(4-47)

Engineer equipment was brought forward and prepositioned at night and was well concealed in the woods. Supplies were likewise brought forward at night. Engineer units were then brought up to the evacuated town of Cattenom on the night of 7-8 November in the rain. The infantry moved up from its rear assembly areas to the woods overlooking the river (previously occupied by the engineers) that same night. This night movement more than a day before their attack contributed to surprise as it minimized movement in the assault area on a critical day. It is important to note that the XII Corps attack started a day before the XX Corps and 90th Division's did and the Germans were undoubtedly keying on any excessive movement or engineer activity anywhere along the Moselle on 8 November.

Artillery was moved forward by bounds and was dug in. Only one gun per battery was registered. Twenty artillery battalions supported the XX Corps plan. (4-48) Whereas a major preparation was planned and executed in the XII Corps attack south of Metz the day before, a minimum artillery and air

bombardment was conducted in the XX Corps assault of the Moselle.

To assist in assuring that the 90th Division attained surprise in its rubber boat assaults crossings north of Thionville at Malling and Cattenom, Walker, the XX Corps Commander ordered one battalion of the 95th Division to conduct a diversionary crossing south of Thionville at Uckange.

Thus the 90th Division conducted an infantry assault crossing of the Moselle River in rubber boat at night in the rain under flood conditions without an artillery preparation to speak of and completely surprised the enemy. Eight battalions of infantry crossed the Moselle in boats that day with minimal losses to enemy action because surprise had been so well achieved. German prisoners of war later revealed that the Germans believed that the 95th Division (which had toured the positions of the 5th Division earlier) was a composite of the badly mauled 90th and 5th Infantry Divisions. (4-49)

BRIDGING

The valiant efforts of the engineers to put a pontoon treadway bridge in at Malling on 12 November were crucial. Two tank destroyers were the only tank killing systems to get across on this bridge before a furious German artillery barrage and the swift current took the bridge out. These two

tank destroyers played a critical role in defeating a tank-infantry counterattack by elements of the 25th PG Division on 12 November. This enemy attack almost reached the river before an American counterattack repulsed the German effort destroying nearly a dozen armored vehicles and killing over 400 Germans.

On 14 November the 645 foot treadway bridge at Cattenom was completed and all organic division vehicles crossed on this single bridge by 1500 hours that day. When the violent German counterattacks began on the morning of 15 November the tanks and tank destroyers were available to help the long-suffering infantryman repulse the assaults. The 10th Armored Division also crossed many elements on this bridge as it exploited the success of the 90th Infantry Division.

D. OUTCOME

The outcome of this battle was, without a doubt, a clear tactical victory for the 90th Infantry Division. "In eleven days and nights of continuous combat the 90th Infantry Division won a brilliant victory. Attacking across a major river in the face of strongly manned fortifications which had been months in the making, it had achieved complete tactical surprise and overrunning the first line of defense insured its maintenance on the far bank. In doing so, it had succeeded in the triple combination of a night assault, a river crossing and the penetration of a fortified area. Hampered by the worst

river conditions in history and despite heavy resistance on all sides it had none the less deployed eight battalions in the first 24 hours and had relentlessly driven forward to secure its initial objective.

It had assaulted and gained in 60 hours the formidable and offtime called impregnable Fort Koenigsmacker with its complete battalion garrison. It had reduced all Maginot fortifications within its zone. Without the benifit of armor or antitank support it had seized and consolidated its bridgehead. For four days and nights it had maintained itself without a bridge and had supplied itself across a mile and a half of swirling, treacherous waters. It had withstood three major counterattacks (two in regimental strength, all supported by armor) and numerous smaller ones. Its infantry with indomitable courage and resolution, despite all handicaps had gained each objective. With a bridge established behind it the Division had lashed out with renewed vigor and advanced beyond expectations. From concrete emplacements, trenches and fortified houses it had taken 2100 prisoners. When enemy defenses crumbled it was primed for pursuit - though it sustained 2300 casualties in a week of constantly heavy fighting, it still possessed the dash and spirit to advance 21 Kilometers to he final objective in the closing hours of the operation. It had captured or destroyed 25 tanks, 15 assault guns, 75 artillery pieces, and over 200 vehicles. It had accomplished every assigned mission." (4-50)

The reason for this tactical victory was attributable to a number of factors the most important of which was that of tactical surprize. The Germans were not expecting a river crossing in this area due to the fact that they occupied the best terrain and the fact that the rainy weather conditions and the swollen river did not favor such a crossing. When the initial attack came, the Germans originally thought that this was a feint. This thus allowed the attack to split the seam of the 416th Division and the 19th VG Division which helped to lead to these units eventual downfall.

Another key factor in this tactical victory was the fact that the main forces opposing the Americans were somewhat depleted in strength and spread over wide frontages. The 416th Division was not capable of offensive action due to its strength of 8500 men and they were on such extended frontages that they had all available battalions on line on the day of the attack.

A third factor in this successful operation was of course the weather which did not favor a river crossing. Consequently the Germans were not expecting an attack in this sector.

Furthermore, there was also some luck involved in this operation as the infantry was able to hold out on the far river bank for four days and nights without armor or antitank support. Also, it would be called luck that the bridging which was completed on 12 November at Malling allowed for the

crossing of two tank destroyers just in time to help defeat a regimental size counterattack by elements of the 25th PZ Division.

Finally, this victory can also be attributed to the leadership of the officers and non commissioned officers of the 90th Division who led their cold, wet, hungry and tired riflemen constantly forward.

It can be said that the Germans lost because of their inability to withstand the assault and their inability to mount a formidable counterattack in time to repulse the initial bridgehead.

If one looks at the initial plan of the 90th Division, it can be said that this fight went according to plan with the exception that, whereas the original operation was forecast to last only two days the operation actually took eleven days. This protracted operation was of course due to the flooding of the Moselle River which did not allow for the crossing of combat support and combat service support elements which were needed as combat multipliers.

From the evidence presented it seems as if the Americans made better use of their captured prisoners as at least once the 3rd Battalion, 358th Infantry used intelligence acquired from captured prisoners to ambush and annihilate a company plus size counterattack.

Finally, this operation provided the spearhead for the XX Corps advance which served as the start of a full dress attack toward the Saar River.

In short, this operation which was termed by General Patton "as one of the epic river crossings in history did much to redeem the Division for their mediocre performance earlier in the year in Normandy. Vastly improved as a fighting unit the Division was now considered one of the best in the Third Army. While it is true that the enemy forces which opposed the 90th Division often were poor, it must be remembered that elements of the Division had met and defeated troops of one of the crack German Divisions on the western front i.e. the 25th PZ Division and had fought through terrain of considerable natural difficulty, made worse by autumn rains." (4-51)

"It was the Moselle crossing which called upon the Division to display the full extent of its versatility and of courage. It required the prompt and unerring application of every lesson learned in the previous months of combat. It can be said unequivocally that the demands were met in full measure with the operation being an unqualified success." (4-52)

BATTLE FOR METZ (4-53)

IN CROSSES T
9-14 November 1944

1

5

INITIAL OBJECTIVE
MAGNIT LINE
AXIS OF GERMAN COUNTERATTACK, 12 NOVEMBER
FORWARD POSITIONS, EVENING 14 NOVEMBER
FLOODED AREA



CHAPTER 5 - ASSESS THE SIGNIFICANCE OF THE ACTION

The Moselle River crossing by the 90th Infantry Division proved successful from several points. First, the river crossing at night caught the Germans completely by surprise. Second, in spite of the flash flooding which prevented the division from reinforcing the eight assaulting infantry battalions with armor, artillery, and tank destroyers, it was able to check the initial German counterattacks. This was accomplished by using organic mortars, airlifted supplies, and corps artillery fires from the opposite side of the river. Except for the brief penetration of the 90th's line by a German armor force, the division was able to maintain the integrity of the crossing site and bridgehead. Finally, after being reinforced with field-pieces, tanks, and tank destroyers, the division initiated the attack that captured Fort Konigsmacher.

The immediate tactical value of the crossing and the establishment of the bridgehead was that it allowed XX Corps to move the 10th Armored Division across the Moselle River, pass through the 90th Division and swiftly capture small towns and strong points to the east. This rapid advance caused the Germans to react quickly against the US triangle of forces which was rapidly growing in the Moselle-Saar River area. The Germans reinforced with two divisions, a panzer division from the

south and an infantry division that had been in front of the idle US 83rd Division. The attacks made by the Third US Army and its reduction of the Saar Pocket had become a serious menace to the Germans. It not only threatened the Germans immediate front, but also (It was later discovered.) threatened Hitler's concentrations of troops and supplies being accumulated in the Eifel for the coming Ardennes Offensive.

The actions of the 90th Division, in concert with the XX Corps plan to capture Metz, accomplished several objectives. The division had successfully crossed the Moselle River and established a bridgehead under the most adverse weather conditions, captured Fort Konigsmacher, destroyed the guns at Hackenburg, broke through the Maginot Line, and linked up with the 5th Infantry Division to isolate and surround the German forces in Metz. Strategically, the crossing operation accomplished very little. The only courses of action that would have seriously upset Hitler's plans would have been an advance by Patton to the Rhine River or an advance up the Moselle Valley towards Trier. However, the Moselle Valley was considered far too narrow for the movement of an army and, at the start of the battle, the 90th Division had an unprotected flank towards Luxembourg in the north. Additionally, there were no US divisions available to support a strike towards Trier or the Rhine.

One thing the Moselle crossing proved was the fine fighting quality of the American soldier. The battle was fought

without the benefit of limitless logistical and combat support, in frequently appalling conditions, and against a desperate and determined enemy.

The significance of the operation is not that it created new tactics or resulted in important lessons learned. The battle's importance in military history is its role in reaffirming several basic principles of tactics. It showed that bold, imaginative, and thoroughly coordinated plans coupled with good intelligence, and executed by well led small units can be decisive.

The operation is a classic example of the proper use of operations security and deception. While there is evidence that the German Army headquarters knew of an impending attack, the front line German units were completely surprised. Careful troop movements, especially at night; judicious movement and camouflage of bridging equipment; and a well planned deception effort were key to this success.

Additionally, the river crossing followed US doctrine of the times and is an example of how to prepare for such an operation. The division was given time to train and rehearse with attached elements, particularly the engineer units. Although weather caused serious problems in crossing the river, the advantage of prior preparations was significant in mitigating the effect of the swollen Moselle on the final outcome of the

battle.

Finally, the 90th Division's crossing of the Moselle River provides an excellent example of a well planned night operation which exploited adverse weather conditions to achieve tactical surprise. This initial surprise allowed the division to establish a momentum which carried the attacking units until armor and artillery could be brought across the river to reinforce defenses against armored German counterattacking forces. However, the 90th Division was extremely fortunate that the Germans were unable or unwilling to commit an armor-heavy counterattack against the light US forces across the Moselle.

Once the 90th Division had been adequately reinforced with armor and artillery, they initiated an attack which finally linked up with the 5th Infantry Division to surround the German forces in Metz. This last phase of the operation was characterized by well coordinated attacks, commitment of reserves in sufficient strength and at the decisive times, and an armor heavy pursuit which prevented orderly enemy withdrawal or destruction of key bridges.

END NOTES

i-1 Dr. Hugh M. Cole, "The Moselle River Crossing of the 90th Division," Military Review, May, 1950, p. 19.

2-1 bid., p. 16.

2-2 Anthony Kemp, The Unknown Battle: Metz, 1944 (New York: Stein and Day, 1980), p. 2.

2-3 Ibid.

2-4 Ibid.

2-5 Cole, "Moselle River Crossing," p. 18.

2-6 Ibid., p. 19.

2-7 John Ehrman, Grand Strategy (London: Her Majesty's Stationery Office, 1956), p. 6.

2-8 Ibid., p. 7.

2-9 Ibid., p. 10.

2-10 Ibid., p. 4.

2-11 Kemp, p. 8.

3-1 Cole, "Moselle River Crossing," p. 4.

3-2 90th Division AAR (November).

3-3 Cole, "Moselle River Crossing," p. 5.

3-4 Ibid., p. 6.

3-5 90th Division AAR (November).

3-6 Cole, "Moselle River Crossing," p. 4.

3-7 bid., p. 7.

3-8 90th Division AAR (November).

3-9 Ibid.

3-10 Cole, "Moselle River Crossing," p. 14.

3-11 Ibid., p. 19.

3-12 90th Division General Order (Microfilm M-N-1092B), Intelligence Annex, 06 1500 November 1944.

3-13 General F. W. von Mellenthin, Panzer Battles (Oklahoma City, Oklahoma: Oklahoma University Press, 1956), pp. 371-394.

3-14 90th Division General Orders.

3-15 von Mellenthin, p. 385.

3-16 90th Division General Orders.

3-17 Major Charles E. Wright, "Moselle River Crossing at Cattenom," Armored Cavalry Journal, May-June, 1948, pp. 50-53.

3-18 Ibid.

3-19 90th Division Monthly Narratives and Supporting Papers for Staff Sections (Microfilm M-N-1091A), "G-1 Summary Sheet," November, 1944."

3-20 von Mellenthin, pp. 371-395.

3-21 Wright, pp. 50-53.

3-22 Ibid.

3-23 Field Service Regulations: Operations (FM 100-5) (Washington: US War Department, 1944), pp. 226-236.

3-24 90th Division AAR, 12 November 1944.

3-25 Wright, pp. 50-53.

3-26 90th Division Monthly Narratives and Supporting Papers for Staff Sections (Microfilm M-N-1091A), "Fact Sheet on the 90th Infantry Division," pp. 1-3.

3-27 90th Division AAR, 13-17 October 1944.
3-28 Ibid., 1-5 November 1944.
3-29 von Mellenthin, pp. 371-395.
3-30 Hugh M. Cole, The Lorraine Campaign (Washington: Department of the Army, 1950), p. 17.
3-31 90th Division Monthly Narratives, "G-1 Summary Sheet", June-August, 1944.
3-32 Cole, The Lorraine Campaign, pp. 177-183.
3-33 90th Division AAR, 10 November 1944.
3-34 von Mellenthin, pp. 371-395.

4-1 Cole, "Moselle River Crossing," p. 6.
4-2 Ibid.
4-3 Ibid.
4-4 Ibid., p. 8.
4-5 Ibid.
4-6 Cole, The Lorraine Campaign, p. 387.
4-7 Ibid., p. 388.
4-8 Ibid., p. 389.
4-9 Ibid.
4-10 Cole, "Moselle River Crossing," p. 7.
4-11 90th Division AAR, p. 9.
4-12 Ibid., p. 10.
4-13 Cole, "Moselle River Crossing," p. 8.
4-14 Ibid.
4-15 Ibid., p. 9.
4-16 Ibid.
4-17 90th Division AAR, p. 11.
4-18 Cole, "Moselle River Crossing," p. 9.
4-19 90th Division AAR, p. 13.
4-20 Cole, "Moselle River Crossing."
4-21 90th Division AAR, pp. 12-13.
4-22 Ibid.
4-23 Ibid.
4-24 Cole, "Moselle River Crossing," p. 10.
4-25 90th Division AAR, p. 14.
4-26 Ibid.
4-27 Cole, "Moselle River Crossing," p. 11.
4-28 90th Division AAR, p. 15.
4-29 Cole, "Moselle River Crossing," p. 12.
4-30 Ibid.
4-31 90th Division AAR, p. 17.
4-32 Cole, "Moselle River Crossing," p. 14.
4-33 90th Division AAR, p. 18.
4-34 Cole, "Moselle River Crossing," p. 15.
4-35 90th Division AAR, p. 18.
4-36 Cole, "Moselle River Crossing," p. 18.
4-37 90th Division AAR, p. 20.
4-38 Ibid., pp. 21-25.
4-39 Cole, "Moselle River Crossing," p. 19.
4-40 Ibid.
4-41 90th Division AAR, p. 27.
4-42 Russell F. Weigley, Eisenhower's Lieutenants (Bloomington, Indiana: Indiana University Press, 1981), p. 384.

- 4-43 Ibid., p. 385.
- 4-44 General George S. Patton, Jr., War As I Knew It (Boston: Houghton, Mifflin Company, 1947), p. 386.
- 4-45 90th Division AAR, p. 2.
- 4-46 Wright, p. 51.
- 4-47 Cole, "Moselle River Crossing," p. 6.
- 4-48 Wright, p. 51.
- 4-49 Weigley, p. 392.
- 4-50 90th Division AAR, p. 28.
- 4-51 Cole, "Moselle River Crossing," p. 19.
- 4-52 90th Division AAR, p. 28.
- 4-53 Cole, The Lorraine Campaign, Map XXX.
- 4-54 Ibid., Map XXXI.

BIBLIOGRAPHY

90th Division After Action Reports. October- November, 1944.

90th Division General Orders. (Microfilm M-N-1092B). November, 1944.

90th Division Monthly Narratives and Supporting Papers for Staff Sections. (Microfilm M-N-1091A). November, 1944.

Cole, Dr. Hugh M. The Lorraine Campaign. Washington: Department of the Army, 1965

Cole, Dr. Hugh M. "The Moselle River Crossing of the 90th Division." Military Review, May, 1950, pp. 3-19.

Ehrman, John. Grand Strategy. London: Her Majesty's Stationery Office, 1956.

Field Service Regulations: Operations (FM 100-5). Washington: US War Department, 1944.

Kemp, Anthony. The Unknown Battle: Metz, 1944. New York: Stein and Day, 1980.

Patton, General George S., Jr. War As I Knew It. Boston: Houghton, Mifflin Co., 1947.

von Mellenthin, General F. W. Panzer Battles. New York: University of Oklahoma Press, 1956.

Weigley, Russell F. Eisenhower's Lieutenants. Bloomington, Indiana: Indiana University Press, 1981.

Wright, Major Charles E. "Moselle River Crossing at Cattenom." Armored Cavalry Journal, May-June, 1948, pp. 50-53.